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ABSTRACT

The current downward enrollment trend in postsecondary institutions is assessed in terms of its meaning for institutions, students, and taxpayers. An agenda is proposed for the review and an estimate is provided of the number of students who are qualified for postsecondary education but who fail to receive it because they lack the funds. It is proposed that the government spend up to two billion dollars more annually on postsecondary student aid after a three-year phasing-in period. Increased governmental spending of 25 percent would mean that in the near future annually about 67 percent of high school graduates would go on to postsecondary education soon after high school, compared with about 60 percent today. Groups of U.S. high school graduates in selected years from 1964 to the present are described and projections are made through 1984. Estimates are made of how many high school graduates of different abilities and family incomes go on to postsecondary education and how many do not. Results of a 1977 survey by the College Board of a sample of guidance counselors in public, parochial, and independent high schools concerning student educational and career plans are analyzed. Issues pertaining to employment and educational opportunity are examined, and arguments for investing more public funds in higher education are presented. Appendices include statistical tables, notes on the College Board counselor questionnaire and a followup mailing, and sample questionnaires. (SW)

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PREFACE

During the spring of 1977 the National Center for Educational Statistics reported that total enrollment in all institutions of higher education in the United States had unexpectedly declined by 0.7 percent. It was the first time during this century such a thing had happened, except for three brief wartime experiences during World War I, World War II, and the Korean War, and once during the Great Depression. Relatively little was said about the National Center's report at the time, perhaps in the hope it was a mistaken blip in the graph of education history. The circumstance was noted briefly in the middle of an April 1977 story in the *Chronicle of Higher Education*, headlined, "Two-Year Colleges Prepare to Fight for 'New Clientele': Officials Expect Sharp Competition for Students with Four-Year Institutions During Next Decade." The story recorded several sentences each from speeches of members of the American Association of Community and Junior Colleges in their annual meeting in Denver.[1]

In September the National Center reported with some embarrassment that the total decline in enrollment for 1976-77 was actually 1.5 percent, not 0.7 percent. A new and abbreviated survey form had been used incorrectly by some colleges and universities, and the mistake was overlooked at first. This gloomy second report was accompanied by the hopeful estimate that 1977-78 total enrollment would resume the more normal upward trend.[2]

[1] *Chronicle of Higher Education*, 25 April 1977, p. 6. *Also* Carnegie Foundation for the Advancement of Teaching, *More Than Survival: Prospects for Higher Education in a Period of Uncertainty*. San Francisco: Jossey-Bass, Inc., Publishers, 1975, p. 24.

[2] *Chronicle of Higher Education*, 6 September 1977, p. 15.

Although there was indeed a temporary recovery in 1977-78, the number of high school graduates is now about to decline and continue downward for more than a decade. The downward trend will create the first prolonged recession in postsecondary enrollment in the nation's history. This study attempts to assess the new trend, what its beginning may mean for postsecondary institutions, for the students who attend them, and for the taxpayers who help pay for them. It attempts to provide a worthwhile agenda for the review and tuning up of our national system of postsecondary student financial aid, and an estimate of the number of students who are qualified for postsecondary education but who fail to receive it solely because they lack the funds.

This book is written for two kinds of reader. The first are those voters, federal and state officials, legislators, and policy analysts who are concerned with the financing of postsecondary education in the United States. For them perhaps this work will help define major issues that require review and action. The second kind are college admission and financial aid officers, presidents, and trustees who will find the detailed tables outlining the market for postsecondary education helpful in examining some of the specific consequences of the kinds of new tuition and admission questions those officers often face from year to year. These tables are in the same format as those that first appeared nine years ago in my book, *Crosscurrents in College Admissions*.[3] The new tables were prepared by Rex Jackson, Program Director, Educational Testing Service, in 1976 for a colloquium on college admissions at Lake Fontana, Wisconsin, sponsored by the College Board.[4]

I am particularly grateful to Darrell R. Morris, Executive Associate for Program and Field Services of the College Board, who suggested both the colloquium in 1976 and the writing of this book. His consistent encouragement and good judgment provided a necessary catalyst. Rex Jackson and his staff provided generous and careful help in designing and analyzing all of the statistics that underlie Chapters 2 and 3, and Appendixes B through E, which together form the core of the book. His was the largest single contribution to this work. Douglas D. Dillenbeck, James E. Nelson, and Sue Watts of the College Board's New York staff, and Lois D. Rice and her Washington colleagues at the College Board also gave important help and advice.

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[3] Humphrey Doermann, *Crosscurrents in College Admissions*, New York: Teachers College Press, 1968.

[4] Humphrey Doermann, "The Future Market for College Education," in *A Role for Marketing in College Admissions*, New York: College Entrance Examination Board, 1976.

As in my first book on access to postsecondary education, I owe special gratitude to Dean K. Whitla and David Riesman at Harvard University. They gave encouragement at the turning points and detailed criticism of early drafts of the manuscript. Without this help, and without the encouragement of members of The Bush Foundation's Board of Directors and staff and of my own family, this work would not have been completed.

Others helped strengthen the manuscript either by correcting errors or by suggesting where problems existed in the work. These included John Shea and Martin Kramer, Senior Fellows at the Carnegie Council for Policy Studies in Higher Education, Berkeley, California; R. Jerrold Gibson, Director of the Office of Fiscal Services, Harvard University; John T. Dunlop, University Professor, Harvard University; Robert P. Huff, Director of Student Aid, Stanford University; Bruce A. Gray, Dean of Students, Gustavus Adolphus College; David W. Breneman, Senior Fellow, The Brookings Institution, Washington, D.C.; Clyde R. Ingle, Executive Director, Minnesota Higher Education Coordinating Board; Kenneth R. Reeher, Director, Pennsylvania Higher Education Assistance Agency; Arthur S. Marmaduke, Director, California Student Aid Commission; Howard R. Swearer, President, Brown University and Richard J. Ramsden, Vice President for Administration and Finance; Alice M. Rivlin, Director of the Congressional Budget Office; John Proffitt, Director of the Division of Eligibility and Agency Evaluation, U.S. Office of Education; and Dan M. Martin, President of the Associated Colleges of the Midwest. I expect that none of these persons fully endorse all of the conclusions in this book, however, and some may disagree with important parts of it. Either way, they have my warm thanks.

Humphrey Doermann
Saint Paul, Minnesota

1: TOWARD EQUAL ACCESS

Work and Education

If one wants to be gloomy about education in America and chooses evidence carefully for this purpose, a pretty depressing case can be assembled. A file of representative clippings for the years 1976 and 1977 would contain stories from most of the major city newspapers and virtually all the major news magazines about both the rising costs of education and the fragmentary but widespread evidence of public dissatisfaction with at least parts of the collegiate world. Also, teenage unemployment was near 20 percent for much of that period, and black urban teenage unemployment at least double that. Reporters were able to find many college graduates and a number of recent Ph.D. recipients driving taxis or tending bar – some reacting well to the unexpected, some not.

Richard B. Freeman, Associate Professor of Economics at Harvard University, summarized some of his earlier work in January 1977 for *U.S. News and World Report*, "The rate of return [on investment in college education] has fallen noticeably since the 1960's – about 3 percentage points, from somewhere between 10 to 11 percent in the 1960's to between 7 and 8 percent now."[5]

Carlos Phears of the Maryland Employment Service told a reporter for the *Washington Post*, "College graduates without a specialized area by and large can be classified as unskilled laborers."[6]

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[5] Richard B. Freeman, "Does it Pay to go to College?", *U.S. News and World Report*, 24 January 1977, p. 59.

[6] "College Grads Facing Blue Collar Future," *Saint Paul Dispatch*, 22 August 1977, p. 1.

Finally, we have learned that in every year for the past few years aptitude scores on college entrance examinations have gone down a few points. Editorial pages frequently interpret this as a sign of general social and intellectual decay.

If this is a correct and reasonably balanced summary of the case, why would anyone today ask taxpayers, as this study does, to consider supporting a larger proportion of our youth in postsecondary study programs? Most of the above summary is correct. But it is hardly balanced.

The strongest recent criticism of schools and colleges concentrates upon the alleged mismatch between the world of formal education and the world of work. As to youth unemployment, the core of the problem is indeed severe. It has appeared so for several years in Japan, Western Europe, the United States, and the other major industrialized nations that publish unemployment figures. To the extent this is an education problem in urban America, its roots appear to be more in social conditions and in elementary and secondary education than in postsecondary education. Unemployment for graduates of two-year colleges and four-year colleges has consistently been significantly lower than for persons who stopped their formal training earlier.[7]

Recent changes in our economy also are important to the issue of the match between the worlds of education and work. The returning veterans from World War II helped produce the largest number of babies in the nation's history. The passage of that group of children through our schools and then into our colleges required major expansions followed by contractions in our labor markets and in our educational system. The advancing baby bulge first created a large demand for additional teachers in the 1950s and 1960s. At the same time, the federal government sharply increased its spending on research and development and on expanding the aerospace and defense industries, creating additional skilled jobs for college graduates. These new skilled positions were filled from the relatively small student generations born in the 1930s and early 1940s. The years following World War II were good ones for new graduates to be seeking their first full-time jobs.

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[7] Data provided by John Shea and John T. Grasso from Bureau of Labor Statistics, *Educational Attainment of Workers Special Labor Force Reports* 53, 65, 83, 92, 103, 125, 140, 148, 161, 175, 186.

But during the early 1970s, these particular supply-and-demand pressures went into reverse. The aerospace and defense industries hired fewer people, and the amount of new federal research and development work decreased in volume. The need for new school and college teachers declined sharply as the war babies passed on through the schools. These labor market contractions made it more difficult for many young adults to find appropriate employment than had been true just previously. Meanwhile, older adult women were seeking first-time employment in increasing numbers, and returning Vietnam veterans were looking for jobs. Just about then, the World War II baby bulge arrived at the job market.[8]

During the early 1970s, therefore, a considerable portion of the employment of young college graduates was at skill levels that were less demanding than their training otherwise permitted. Unemployment of the young was also high. If the economy did not produce all the jobs that ideally it should have, it produced more than expected. During the period from 1960 to 1975, one-half of the total expansion of 11 million persons in the civilian labor force was accounted for by youth 16 to 24 years of age.[9] It seems little wonder that bad spots remain, and if anything, perhaps surprising they are not worse.

Many observers have noted that the educational system of the United States provides a remarkable degree of adaptability in the American work force. They note also that our system of education is a second-chance system. It may appear chaotic, but it is less likely than most to waste talent through premature and incorrect classification. Here are comments from four different observers:

> "If there is anything unique about American higher education, it is the flexibility of the system, its willingness and ability to absorb men

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[8] Derived from data provided by the Carnegie Council on Policy Studies in Higher Education, Berkeley, California, August 1977. *See also* Robert W. Bednarzik and Deborah P. Klein "Labor force trends: a synthesis and analysis," *Monthly Labor Review*, October 1977, Vol. 100, No. 10, pp. 3-15.

[9] Derived from data provided by the Carnegie Council on Policy Studies in Higher Education.

and women who did not necessarily take the right degrees, in the right order, and at the right age."[10] – André L. Danière (1964)

"In seeking to understand the reasons that lie behind the phenomenal productivity of the American economy, it would be an error to neglect the unique factors in the American scene, factors that derive from the history of the country. The wealth of natural resources available cannot be overemphasized. Freedom from rigid class structures and traditions . . . has proved a great boon as far as the American economy is concerned, because of the encouragement thus given to individuals to develop their full potential.

"The educational system must be given substantial credit for the ways in which it contributed to the reality of the opportunity story. American schools have encouraged the individual to take the future in his own hands and set high aspirations for himself. Furthermore, the ever greater extension of the educational system has increasingly avoided the wastage which takes place when young people must make occupational decisions at too early an age. Young Americans have had the opportunity to mature emotionally and intellectually before they have had to commit themselves. Finally, the ability of large numbers of individuals to receive specialized training within the educational system at no cost at all, or at a very minimal cost, has prepared them to enter many preferred occupations. In short, the school system itself has been a major source of occupational mobility."[11] – Eli Ginzburg (1956)

"The existence of a sizeable body of educated workers, flexible enough in skill and interest to move into fields in which the demands and rewards are greatest is a major national asset.[12]

– Dael Wolfle (1954)

"Visitors from abroad, however they may ideologically feel about America in general, commonly come to study and even praise our unique array of public and private colleges: liberal arts institutions, technical colleges, junior colleges, major public and private univer-

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[10] André L. Danière, *Higher Education in the American Economy*. New York: Random House, Inc., 1964, p. 169.

[11] Eli Ginzburg, "Education and National Efficiency in the U.S.A.," in *Education, Economy, and Society: A Reader in the Sociology of Education*. A. H. Halsey, ed. New York: Free Press of Glencoe, 1961, pp. 78-79.

[12] Dael Wolfle, *America's Resource of Specialized Talent*. New York: Harper and Bros., 1954, p. 269.

> sities. Contrary to the British conservative adage, 'more means worse,' our institutions have grown in number and diversity without loss of quality; our ablest students are at least on an equal footing with those from countries with far more selective streams entering university. . . .
>
> "Our diversity has one important consequence which is not always recognized. It means that the United States is a country of second-chances and even third-chances. Poorly guided, perhaps poorly motivated, perhaps lacking a sufficient horizon on (his or her) own interests and on the world, a young person may make a start in a college of low academic and intellectual caliber and then transfer, as for example, is virtually impossible in the United Kingdom, to a college of higher quality. . . . In most countries of the industrial world, the decision is a fairly final one at age 11 or 14 or whenever, when one either enters the university track or one does not. There is no room for late bloomers and late deciders."[13] —David Riesman (1975)

When American postsecondary education is compared with that of other industrial countries, at least four other notable differences are revealed, three of which are: the American system is obviously expensive; it provides many more student places per thousand of population than any other nation; and its university faculties were awarded almost as many Nobel prizes in the natural sciences as were awarded in all other nations combined.[14] On at least these limited and suggestive measures, then, it appears relatively high on cost, on coverage, and on quality. The fourth difference is that our public and private colleges both seek a relatively large share of their support directly from students and their families. The United States is unusual among the major nations of the world in maintaining a major nonpublic sector of independent and church-controlled colleges. William G. Bowen, economist and president of Princeton University, has estimated that our mixed system of support probably provides a larger total expenditure for higher education than would be true if American higher education relied solely either on private or on public funds.[15] Finally, in the United States there is a relatively large and growing number of private, non-degree trade schools, business schools and training programs which are only sparsely recorded in official statistics but which are extremely important to skill development in parts of the work force.

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[13] David Riesman, "The Future of Diversity in a Time of Retrenchment," mimeographed, Cambridge, Mass., 1975, pp. 1, 14-15.

[14] Carnegie Foundation for the Advancement of Teaching, *The States and Higher Education: A Proud Past and a Vital Future*, San Francisco: Jossey-Bass, Inc., Publishers, 1976, pp. 22-24.

Herbert H. Hyman, Charles R. Wright, and John Shelton Reed recently analyzed national public opinion polls conducted between 1949 and 1971. They selected only polls in which responses could also be classified by the age and level of education of the respondents. Hyman and his colleagues compared results from respondents who only finished elementary school with results from high school and college graduates, and they demonstrated that the higher the level of education completed, the better informed respondents were and the more likely they were to continue learning afterward – through newspapers, books, and magazines. College graduates also were much more likely to be aware of new medical knowledge that could affect them, more likely to take adult education courses, and more likely to participate in public affairs.

> "Surely the image of the school as stultifying the student, as destroying the natural passion for learning and the love of intellectual discovery, is not compatible with our finding that with more education there is more information-seeking and more receptivity to new knowledge, implanted so well that they survive old age and other circumstances of life."[16]

The authors acknowledge that the close association of one variable with another does not prove cause and effect, and that conceivably some cause other than varying levels of education might have produced the results they document. But other causes are not yet apparent. Meanwhile, in a world in which administrative structure and political issues do not grow simpler, in which job mobility will likely increase, and in which the technical demands of many jobs will remain high, it is important to have evidence for what previously was taken on faith, that early training probably has a lasting effect and also contributes to adaptability throughout life.

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[15] William G. Bowen, "University Finance in Britain and the United States: Implications of Financing Arrangements for Educational Issues," *Public Finance*, Vol. 18, No. 1, 1963; John T. Dunlop, telephone interview, January 1978.

[16] Herbert H. Hyman, Charles R. Wright, and John Shelton Reed, *The Enduring Effects of Education*, Chicago: University of Chicago Press, 1975, p. 111.

Finally, a relatively large and stable proportion of the customers themselves, college students, said when polled that they were satisfied or very satisfied with their college. Martin Trow recently reported these results, summarized in Table 1, from student samplings at U.S. undergraduate colleges in 1969 and 1975.[17]

Table 1. Percentages of students satisfied and dissatisfied with their colleges, 1969 and 1975

	1969	*1975*
Question: What is your overall evaluation of your college?		
Very satisfied or satisfied	66%	71%
On the fence	22	20
Dissatisfied or very dissatisfied	12	9

None of the evidence described above proves that if a larger proportion of U.S. high school graduates does continue its formal education past high school, as this study recommends, these particular people will be sufficiently wiser, happier, healthier, or more employable to be worth the added expense. However, the evidence does seem to show that a balanced judgment of our educational system can give it high marks without claiming perfection. If the system's breadth of coverage were extended, that would seem to be building on strength. Adaptability and fairness are both difficult commodities to measure, but the public expenditure recommended by this study is intended for that kind of purchase, more than for the more easily measured "products" of education,

[17] Martin Trow, "Aspects of American Higher Education," a report for the Carnegie Council on Policy Studies in Higher Education, Berkeley, California, 1977. Table 1 is condensed from Table 2, p. 13, of the Trow report.

such as higher annual earnings to individuals, or rate-of-growth increments in the gross national product.

Recent Changes in Postsecondary Enrollment and in Appropriations for Student Financial Aid

The past decade has brought both an unprecedented growth in postsecondary enrollment and a significant move toward equality of access to this training among all income classes and racial groups. Between 1965 and 1975 enrollment for credit at two-year and four-year colleges rose from 5.5 million students to 9.7 million.[18] This increase was partly due to the arrival of an unprecedented age bulge, and partly the result of conscious national policy to move toward universal access to higher education—even though the precise meaning of "universal access" is yet to be defined. Between 1970 and 1974 the enrollment of black students in college increased by 56 percent while the corresponding white enrollment increased 15 percent. By 1974 the college participation rates for blacks and whites was approximately equal within any major income class, although a much higher proportion of black families than white are low-income families. A higher proportion of all students from families earning less than $10,000 a year attended college in 1974 than in 1970.[19]

Accompanying and stimulating these enrollment changes has been an even more rapid increase in the amount of federal and state assistance available to students. This aid usually is provided on the basis of demonstrated individual financial need. The funds come in the form of scholarships and grants, loans, and work-study payments. Table 2, which excludes loan payments, shows that state need-based student aid and federal undergraduate student aid, excluding loans, increased from $1.7 billion in 1970 to $7.8 billion in 1976.

The new postsecondary student aid programs of the 1960s and

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[18] *Chronicle of Higher Education*, 19 September 1977.

[19] U.S. Bureau of the Census, "School Enrollment – Social and Economic Characteristics of Students: October 1974," *Current Population Reports*, Series P-20, No. 286. Washington, D.C.: U.S. Government Printing Office, 1975, pp. 4-6.

Table 2. Selected funds for college student aid from federal grant and work-study programs and state need-based scholarship and grant programs, fiscal years 1970 and 1976 (dollars in millions)

	Appropriations		
Program	*Fiscal year 1970*	*Fiscal year 1976*	*Increase*
Federal:			
Post-Korean War educational benefits to veterans*	$ 665	$3,872	$3,207
Other federal student aid†	811	3,282	2,471
State:			
Need-based scholarships and grants	236	645	409
Totals	$1,712	$7,799	$6,087
Total percentage increase			+355%
Total average annual increase			+ 24%

* Does not include benefits to wives, widows, or dependents.

† Includes Social Security Benefits, Supplementary Educational Opportunity Grants, and the College Work-Study Program, and for fiscal year 1976, Basic Educational Opportunity Grants and State Student Incentive Grants.

SOURCES: 1970 and 1976 figures for veteran's benefits are taken from the FY 72 and FY 78 editions of the *Special Analysis* of the President's Budget, prepared by the Office of Management and Budget. Social Security Benefits estimates for FY 70 were derived from the Social Security Administration's *Annual Statistical Supplement* for 1974. FY 76 estimates for this program are derived from the FY 78 *Special Analysis* of the Budget. Figures for the other federal student aid programs are taken from the Bureau of Postsecondary Education *Factbook* (Washington, D.C.: Office of Education, 1977). Figures for state aid were prepared by Joseph D. Boyd, *National Association of State Scholarship and Grant Programs, 8th Annual Survey, 1976-77 Academic Year*, Illinois State Scholarship Commission, Deerfield, Illinois, 1976.

1970s were developed and expanded by state legislatures and the Congress with strong bipartisan support. This support remained intact during the buoyant period of collegiate expansion, through the divisiveness of the Vietnam wartime period, and through the recent postwar period of alternating inflation and recession. Despite sharply different economic conditions and voter climates during those periods, legislators and legislative draftsmen managed to avoid many of the worst pitfalls that could have been predicted. They avoided much of the stop-and-go uncertainty that plagued the federal predoctoral fellowship programs in arts and sciences during the 1950s and 1960s. They avoided the more recent short-term reversals of strategy that have limited the effectiveness of federal support of medical education. They largely avoided attempts to convert the programs into loyalty screening devices during the Vietnam War.

The new student aid programs have several unusual design features that help ensure that the system at its best can adapt to varying economic and enrollment conditions and also can avoid wasteful public expenditure. The grant programs require, in most cases, that students and their families contribute to the expenses of education, so that postsecondary education is not completely a public responsibility. The majority of the funds go to individuals to meet demonstrated financial need, rather than to institutions on a fixed-quota basis.[20] This market-like mechanism acts to encourage flexibility and invention within different sectors of education and within different institutions. This feature has served well during the period of enrollment expansion just past. It should prove even more important in the period ahead when postsecondary enrollments shrink; the whole system of student aid will not unwittingly freeze enrollment patterns where they were when the programs began. Finally, these public funds may be used by students in public colleges, in private nonprofit colleges, and in accredited for-profit business and technical schools. Without this breadth of eligibility, our array of postsecondary institutions could not have retained its healthy diversity. In retrospect, the design, maintenance, and expansion of this system of postsecondary student aid is one of the remarkable legislative and administrative achievements of the postwar years.

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[20] Three "campus-based" programs of federal aid are allocated first to institutions and then to individuals: Supplementary Educational Opportunity Grants; College Work-Study; and National Direct Student Loans. The amount awarded an institution changes from year to year, however, depending on estimates of relative need.

Two Proposals

This book makes two major proposals: first, that government spend up to two billion dollars more annually on postsecondary student aid after a three-year, phasing-in period; and second, that the processes and definition of federal and state student aid programs be reviewed to make sure they are as efficient as they should be in achieving their intended results.

State and federal spending to support postsecondary students with demonstrated financial need was about $7.8 billion in 1976. The 25-percent increase in spending recommended in the first proposal would act in two predictable ways. It would give further assistance to students already enrolled, some of whom now work unduly long hours in student employment jobs or borrow more than is wise in order to complete their studies. More important, the increase in spending would permit about 200,000 additional U.S. high school graduates a year, who do *not* now go on to postsecondary education, to continue their formal education. This is the estimated number of high school graduates who would profit from further training but who fail to receive it solely because they lack the funds. The cost of further training for these high school graduates has not been adjusted here for possible future inflation.

Chapters 2 and 3, which form the core of this book, provide more detailed estimates of the income level, scholastic aptitude, race, and academic ambitions of these young men and women. The majority of them are students of low or low-middle family income and of moderate aptitude and scholastic accomplishment in high school. Although a majority are white, a significant proportion are black, Hispanic, and American Indian students. At present about 1.9 million high school graduates do continue on to postsecondary education within 18 months of high school graduation. If adopted, the proposal to increase government spending 25 percent would mean that in the near future annually approximately 67 percent of high school graduates would go on to postsecondary education soon after high school, compared with about 60 percent today.

Why is a 25-percent increase in student aid needed to achieve an increase in postsecondary enrollment of about 11 percent? The calculations in Chapter 2 note that there is no reliable way to target the added student aid funds so they go only to students who would not enroll otherwise. This is true even though funds in any event go only to students with demonstrated financial need. An estimated half of the suggested two billion dollars probably would go to those now outside our postsecondary education systems, and about half to those already within it. Finally, the postsecondary students who might benefit from all this are estimated to be likely to enroll in more than one year each of postsecondary education. Therefore, one cannot simply divide 200,000 students into two billion dollars and whistle at the high apparent cost per student. One would be wrong by a factor of almost six.

The costs of this proposal are either about $3,400 per additional student entering postsecondary education, or, more accurately, $1,700 per additional student, plus an equal amount spread among the much larger population of the already-enrolled. However, if more money is made available, it would be wise to tune up the present definition and administration of the current federal and state student aid programs. If these programs begin to operate under properly funded conditions, their mechanisms must continue to guarantee that government spending is limited to students who need it, and in the amounts needed.

Why make such a proposal now? The principal reason is a longstanding one: If money were not a barrier for these additional students, the available evidence strongly suggests that their desire and capacity for further training is strong. This is not to say that everyone should have formal postsecondary education or that money is the only problem. But providing the opportunity for further education to at least some of those high school graduates who could benefit from continuing their formal training but fail to do so solely because of lack of funds seems like a worthwhile step in its own right. It also would represent a relatively conservative step toward equal access to postsecondary education. Compared with other national obligations, this action seems both fair and productive.

Three other reasons favoring a 25-percent increase are essentially matters of timing. An age bulge is passing through our colleges, universities, and technical schools. In many sectors, enrollment is about to enter its first long recession in the nation's history. Thus the *proportion* of high school graduates enrolling in postsecondary institutions can be increased without enlarging the *number* of students in the total enterprise. New increases would help offset the predicted decline in base population. For the first time in the nation's history one could increase the proportion of high school graduates taking postsecondary training without at the same time paying the capital costs for a corresponding expansion of our system of postsecondary institutions. The enrollment projections underlying this conclusion are discussed later in this chapter.

Also, I noted earlier that the young-adult age bulge in the population has meant relatively high levels of youth unemployment and underemployment. It would be fortunate if a significant number of young adults delayed their entry into the labor market by attending college to acquire new skills and career adaptability. This good fortune alone will not solve youth unemployment, since some of the most difficult problems are among school dropouts, some of whom are ineligible or unfitted for postsecondary training. But the total effect on labor markets nonetheless seems favorable. It would provide further education and better job opportunities for a larger proportion of high school graduates and at the same time relieve some of the pressure on the current labor market.

Finally, the effects of a prolonged enrollment recession on our whole network of postsecondary institutions has not been fully recognized. It deserves further attention. Some of the foreseeable consequences are noted later in this chapter. Again, the effect of this proposal would not be to "solve" the problem of declining enrollments, since the additional postsecondary students discussed here are not carbon-copy replacements for those lost through normal shrinkage in the number of high school graduates. The new postsecondary students would be much less likely, on the average, to attend today's selective four-year colleges and more likely to attend two-year public community colleges, technical schools, and private, certificate-granting trade and business schools. The probable distribution of these students among postsecondary institutions is described in Chapter 3. Nonetheless, all sectors of postsecondary education would encounter some anti-recession cushioning effect if this proposal were adopted, along with some incentive either to adapt their programs to this new clientele or watch others receive that business.

Review of Student Aid Programs

This study's second major proposal is that there be a thorough review of the processes and operating definitions of state and federal student aid programs. No fundamental change is proposed here in the general goals of these programs nor, in most cases, in who should be responsible for operating them.

There are three major reasons for a thorough review now of the major public programs of postsecondary student aid. First, while the "system" is basically well conceived, no single private or governmental or collegiate authority is responsible for fitting all its components together. The components still manage to work alongside each other, but not as easily as they once did. The system has been extended to cover far more people and more kinds of schools and colleges than were originally allowed for. For example, students attending two-year colleges and for-profit business and trade schools receive far more aid now than they did ten years ago. Adjustments for expansion and change in the system are needed. Second, federal spending for undergraduate student aid has expanded to the point where it is the largest single source of federal assistance to U.S. colleges and universities. It is a major budget item for almost every kind of college. More than in the 1960s, therefore, operation of federal and state student aid programs must be evaluated not only for what they do for the educational opportunity of individuals, but also whether their long-run impact on whole groups of institutions makes sense. Finally, now that federal and state funds for postsecondary student aid begin to approach the achievement of some definitions of universal access, the operators of these programs must find new ways to determine on a regular, recurring basis how much expenditure is enough. The problems of administering a fully funded program are somewhat different and in some ways more difficult than administering a starved group of programs. The questions needing review are the ones that arise from success and rapid expansion rather than from poor design or bad management.

The first of my two proposals identified a legitimate and unmet educational need and estimated that meeting the need would cost about two billion dollars a year after a two- or three-year phase-in period. However, I have not specified exactly what mixture of grants, loans, and work-study this new assistance should take, nor have I concluded what balance of state and federal responsibility would be the best balance, assuming it is possible to achieve it. These matters also should be a part of a further review if it occurs.

Definition and Scope

This study is intentionally limited in scope, in order to make it manageable. It attempts to deal only with the issues of maintaining and augmenting public programs of need-based student aid to postsecondary students in the United States, although it might also have dealt with financial aid provided by colleges and schools and other nonpublic sources. The designation "postsecondary" as used throughout this book has a limited meaning: It does *not* include graduate professional training. For the most part it also excludes several thousand unaccredited and proprietary trade schools *not* eligible for federal student aid funds. On the other hand, "postsecondary" is intentionally a broader definition than "accredited collegiate." Many of the young adults who could make good use of further formal education after high school are inclined, according to their school counselors, toward training in vocational subjects. Finally, there is the question of the growing number of older-adult, part-time, postsecondary students and how they might be made eligible for more public subsidy. This last is an important question, but it is sufficiently different from questions of aid to traditional, full-time, or almost full-time, younger students that I have avoided it.

An Enrollment Recession?

As mentioned earlier, the probable trend of enrollment for U.S. colleges and universities during the next 15 years is downward. Whether it is sharply downward or moderately downward appears to depend in large part on what state and federal legislative policy toward student aid will be. Significant error is easy to commit in projections like this. The calculations are particularly vulnerable in this case, when one must deal with a turning point rather than the middle of a well-established trend.

Recent high school graduates constitute the majority of all postsecondary enrollment today, and estimates of that portion of enrollment are the easiest to make. The number of U.S. high school graduates for the next 15 years appears relatively predictable, because except in wartime years, the proportion of U.S. high school graduates continuing formal education soon after graduation has been relatively stable. The students who will graduate from high school over the next seventeen years have already been born. Dropouts from school between the first and twelfth grades have been reduced to the point where further significant reduction does not appear likely. Consequently the different published projections of U.S. high school graduates do not vary widely. The number of graduates begins to decrease in 1978. The number will be down 15 percent by 1984 and 22 percent by 1990, the first such prolonged decline in the nation's history.[21]

Under any reasonable projection of birthrate in the near future, the population of high school graduates 18 years from now should begin to expand. An increased birthrate itself is not required to achieve this future expansion. The number of potential parents is rising as the post–World War II baby bulge reaches the average age of childbearing.[22] Thus far there is little disagreement about the description of this trend.[23]

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[21] Humphrey Doermann, "The Future Market for College Education," in *A Role for Marketing in College Admissions*. New York: College Entrance Examination Board, 1976, pp. 1-3.

More uncertain is the future enrollment in technical institutes, trade schools, colleges, and universities. These numbers can be influenced significantly by government spending policies, by the behavior of older adults, by pricing policies in the different sectors of higher education, by various aspects of the job market, as well as by the basic trend in new high school graduates.

The most pessimistic undergraduate enrollment projection to receive wide attention recently is one designed by Stephen P. Dresch at Yale University. Dresch projects a college enrollment decline of as much as 33 percent by the year 2000. He reasons from recent wage trends that the apparent economic return resulting from college attendance is declining. People see this, he says, and behave accordingly. He estimates that a much smaller proportion of high school graduates will enter college during the next 20 years than during the last 20 years. Dresch expects the trend to continue until the education-intensive portion of the labor market once more becomes short of college graduates and until college degrees again begin to command a larger wage premium. The Dresch model does not deal either with nondegree enrollment or with the enrollment behavior of adults over age 25.[24]

The most careful projection of college and university enrollment, which takes into account both young-adult and older-adult behavior, was produced by the Carnegie Foundation for the Advancement of Teaching in 1975 and is shown in Table 3. The study also appears to be the most careful work available concerning the major factors that will probably determine the enrollment future

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[22] U.S. Bureau of the Census, "Projections of the Population of the United States: 1975 to 2050," *Current Population Reports*, Series P-25, No. 601, Washington, D.C.: U.S. Government Printing Office, 1975, pp. 1-5, Table A-5.

[23] Doermann, "Future Market for College Education," p. 2.

[24] Stephen P. Dresch, "Demography, Technology, and Higher Education: Toward a Formal Model of Educational Adaptation," *Journal of Political Economy*, 1975, Vol. 83, No. 3, pp. 535-569.

Table 3. Head count enrollments by level and type, 1960-2000 (numbers in thousands)

	Degree-credit undergraduates					
Year	Age 18-21	Other	Graduates	First professionals	Non-degree-credit	Total
1960	1,911	1,220	356	96	206	3,789
1970	4,071	2,779	900	170	661	8,581
1973	4,459	2,990	989	219	1,007	9,664
1980	5,138	3,293	1,050	258	1,813	11,513
1985	4,952	3,613	1,148	295	2,129	12,137
1990	4,905	3,701	1,120	299	2,154	12,179
2000	5,355	3,844	1,182	311	2,102	12,794

SOURCE: Carnegie Foundation for the Advancement of Teaching, *More Than Survival: Prospects for Higher Education in a Period of Uncertainty.* San Francisco: Jossey-Bass, Inc.

and the general health of U.S. colleges and universities until the year 2000.[25]

The Carnegie projections of head-count enrollment in colleges and universities show a no-growth total trend rather than the cyclical decline-and-recovery pattern that would occur if college enrollment was assumed to follow the trend established solely by the projected number of high school graduates. Key assumptions in the Carnegie reasoning are that adult enrollment and non-degree-credit enrollment would continue to expand, and that present college dropouts might be encouraged to return to college in larger numbers. The Carnegie report also assumes that federal and state financial support to students will persist, and that funds now going to veterans education will continue to be spent but for other students. The Carnegie report makes clear that these assumptions require a higher degree of adaptability within colleges, and greater stability in state and federal government policy than one might comfortably expect on the basis of much of our past experience.[26]

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[25] Carnegie Foundation for the Advancement of Teaching, *More Than Survival: Prospects for Higher Education in a Period of Uncertainty.* San Francisco: Jossey-Bass, Inc., Publishers, 1975.

Michael S. McPherson at Williams College has attempted to assess future demand for private higher education. He concludes that the most likely trajectory for enrollment in both public and private higher education in the next decade is downward. He believes this is probable even under the relatively optimistic assumptions about public policy and the economy that underlie the Carnegie projections.[27] Without making a separate study, I am inclined to agree with McPherson, although for reasons that give less weight to developments in the job market and more to demographic trends.[28]

The trend in the number of high school graduates appears likely to remain the driving force in determining degree-credit undergraduate enrollment in colleges, universities, and other postsecondary institutions. However, because of increasing adult enrollment, the coming decline in postsecondary undergraduate enrollment apparently will not be as severe as the decrease in the number of high school graduates.

All of this suggests that the most probable baseline enrollment trend for postsecondary undergraduate enrollment might be drawn by starting with the Carnegie steady-state projections, overlaying the decreasing projection for high school graduates, and then splitting the difference. The line of dashes in Figure 1 illustrates the result. The dotted line in Figure 1 illustrates what might occur if the additional expenditures recommended in this study were appropriated and phased in over a three-year period beginning in 1979.

A main reason why the projections in this study are more gloomy than those of the Carnegie series is a more cautious view about trends in adult education and collegiate financing. It is hard

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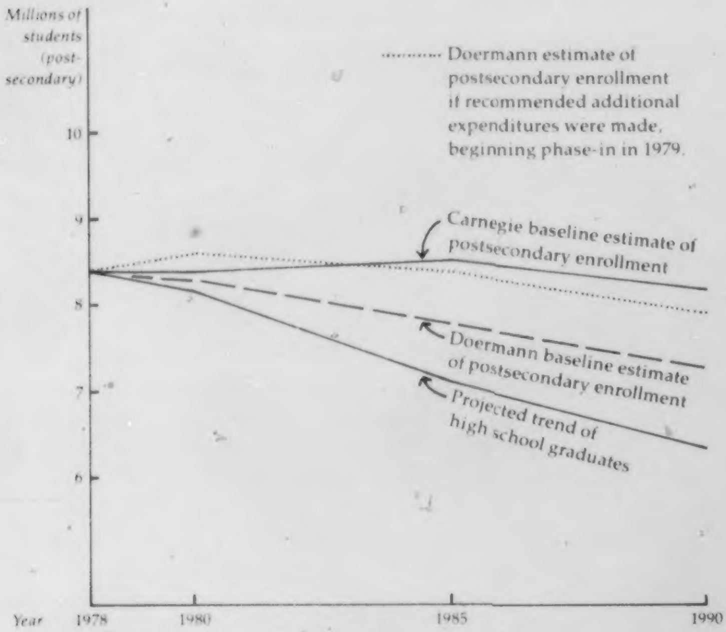
[26] *Ibid.* pp. 44-49.

[27] Michael S. McPherson, "The Demand for Private Higher Education," in *Public Policy and Private Higher Education*, David Breneman and Chester E. Finn, eds., to be published, Washington, D.C. The Brookings Institution. (Preliminary draft.)

[28] *See* John Bishop and Jane VanDyk, "Can Adults be Hooked on College?", *Journal of Higher Education*, Vol. 48, No. 1, January/February 1977, pp. 50-57.

Figure 1. Projections of postsecondary enrollment (1978-1990)



SOURCES: Carnegie baseline estimate is derived from Carnegie Foundation for the Advancement of Teaching, *More Than Survival*, Table 5, p. 45. The projected trend of U.S. high school graduates is derived from the same series, provided by the National Center for Educational Statistics, as generated the appendix tables. This trend line does not portray numbers of students, but rather the rate of decline following 1978. The Doermann baseline estimate of postsecondary enrollment splits the difference between the Carnegie baseline and the rate-of-decline trend line for high school graduates. Both baselines, Carnegie and Doermann, assume no significant change in public expenditure policy for postsecondary student aid. The Doermann adjusted trend line assumes that public expenditure is increased eventually by about $2 billion a year, and that a four-year phase-in period beginning with 200,000 additional students in 1979 and rising to 600,000 additional students by 1982, will produce approximately the experience illustrated by the dotted line.

to know how much money adults will have for formal education, compared with the recent past. Funds for veterans benefits are cutting back sharply. But corporate employees and union members could avail themselves of voluntary, adult education benefits far more than they do now. Government subsidy for adult, part-time, nondegree study is discussed periodically, but actual experimental subsidy programs are sparse and limited. Future financing patterns are not clear.

If there is no major change in public subsidy for adult education in the near future, then the current pricing patterns for many special adult education programs may need to change before one can anticipate a major new surge of adult enrollment. The choices to colleges and universities under present constraints do not appear simple. Low price is probably necessary to continue to attract students – particularly unsubsidized students – but higher price is probably necessary to help defray general and administrative expenses, let alone permit expansion into more varied and higher-cost programs.

Ordinarily, pricing might not be a fundamental issue affecting enrollment. However, continuing education and adult nondegree programs usually have sold their services in single-course units, operating at the budgetary margin of the college or university that sponsors them. Courses are offered only if they can pay their way. The faculty usually receives a relatively small moonlighting wage. The arrangement provides a low-cost set of offerings at bargain prices. Courses that fail to pay their way on this basis tend not to be offered: laboratory science, small humanities seminars conducted by full professors, and so on.

Full-time, degree-granting programs, by contrast, are priced as a total mixture of academic and support services. The relatively expensive total mixture must cover total costs either from tuition alone or from tuition plus public subsidy. Private colleges periodically consider whether to try to make adult education a major activity, as a way to improve financial health. They often conclude that the only way to accomplish this easily is if new adult students can be encouraged to fit into the regular schedule, part or full time, and at the relatively expensive full-time rates. For the rest, unless separate new adult courses and programs are unique or so worthwhile that they can command unusually high prices, they will operate in a cut-price market that permits little contribution toward the colleges' fixed costs.

Some state universities, seeing the possibility of future enrollment decline and wishing to insulate their budgets against it, are now asking (if they have not already done so) that continuing education students be counted in the basic state enrollment formula that determines the university's state legislative appropriation. Having taken the trouble to negotiate an expanded head count, it is not likely that public universities will be anxious to raise prices for adult education and risk losing enrollment. Price competition seems likely to continue and perhaps become more intense. Under present conditions, therefore, the ability of private colleges to enter the adult student market appears to be limited to relatively minor recruitment into regular degree programs, and to special adult programs where the instruction is low-cost, high-worth, and without serious public competition. Also, unless public universities begin to price their continuing education and extension divisions significantly above cost, the definition of their offerings will be inexpensive programs for full-paying customers.

The Effects of Shrinkage

If adult enrollment does not grow as much as the more optimistic projections suggest, and if the total student pool begins to shrink, what then? Enrollment is the financial base of private colleges, while enrollment-determined formulas define the financial base of many public colleges. Most public and private colleges, therefore, depend on maintaining enrollment levels. If the total pool shrinks, competition among individual colleges and perhaps between the public and private sectors seems likely to increase.

One may wonder if it is so bad that an individual college is forced to shrink. Some have done it without apparent ill effect, and perhaps more can do so, but the process of shrinkage ideally requires a kind of internal flexibility and interchangeability of parts that many colleges lack and may find unduly difficult to create. If student enrollment declines, initial budget arithmetic suggests the number of teachers should decline proportionally.

Faculty tenure provisions, collective bargaining agreements, and the new laws concerning mandatory retirement age further urge that reductions be made first among nontenured faculty or by not replacing retirees with new young faculty. Since the reductions over a number of years tend to occur among the youngest and lowest-paid faculty, the budget question is not fully resolved merely by maintaining the old student-faculty ratio. Faculty salary expense per full-time student will rise unless the student-faculty ratio is further increased.

One portion of the budget unprotected by prior contract or other claimants is the college's scholarship allocation for prospective freshmen. Recruitment needs may partially protect it, but not necessarily against the temptation to recruit more middle-income and upper-income students. Building maintenance budgets can also be reduced, but in the long run the grounds and buildings must suffer. An early casualty in the retrenchment process tends to be the hiring of faculty for interdisciplinary studies and experimental programs. These programs are often cut back to try to preserve the integrity of core department programs. As budgets shrink, administrative judgment is more sharply questioned. Almost by definition, the process ages the faculty and administration, gives both cause for mutual suspicion, perhaps reduces the diversity of students enrolled, and further inhibits a college's ability to adapt at a time this skill is needed most.

Other recent examples of colleges with shrinking enrollments suggest that a measure of flexibility may return if a college finally reaches the edge of bankruptcy. But not many colleges can operate successfully that way for long. The tendencies just described are not iron laws, nor do they describe precisely the experience at every college that has lost enrollment. But many such colleges have recently experienced these pressures and at least some of these events in addition to the strains imposed by continuing inflation.

U.S. colleges and universities have never as a group been through a prolonged enrollment recession or even a long steady-state period. Some institutions will not shrink in size and may even grow. Some may remain about the same size but will adapt to a quite different student mixture. Others will shrink but retain the quickness and capacity to adapt. Others will shrivel and stagnate. A few will die. The addition of 200,000 more high school students into this network will certainly not solve the enrollment problems of all our postsecondary institutions. Public two-year colleges and technical institutes, and private trade schools probably would enroll most of the "new" students, while most other colleges and universities enroll relatively few.[29] Any guess as to what it will be like can be only a guess, but it does appear it will be a difficult time.

As noted above, an enrollment recession for many of these institutions probably will mean they may lose much of their capacity to adapt. Would that hurt the quality of postsecondary education and the degree of choice open to those students in the next two decades? Yes. Can something be done at reasonable cost to help avoid this outcome? Possibly.

Overview of Remaining Chapters

Chapter 2 describes annual groups of U.S. high school graduates in selected years from 1964 to the present and projects the groups ahead through 1984. These high school graduates are described

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[29] The March 1977 College Board questionnaire to high school guidance counselors asked counselors, first, to estimate how many of their 1977 seniors were *not* planning to continue formal education but might make a better next step if they would consider and plan further full-time education. Second, the counselors were asked what types of postsecondary institutions might be best suited for these students. Following is an aggregate tabulation of the percentage of students involved above which the counselors thought would be best served at each type of institution.

Type of postsecondary institution	*Percent of high school seniors who counselors estimate would be best served in each type of institution*
4-year colleges	13.0%
2-year colleges	24.3
Public technical schools or institutes	43.1
Private business schools or trade schools	19.6
Total	100.0%

jointly by verbal scholastic aptitude and by family income. This joint description, combined with other data, permits an estimate of how many high school graduates of different abilities and family incomes continue on for postsecondary education and how many do not. The chapter then describes how one can estimate the number of students who do not now plan to continue formal education but who might profit from it if funds were available. Finally, the chapter proposes what aggregate public expenditure might be needed to enable those students to continue, assuming no significant savings could be made within present programs. This is the two-billion-dollar supplement already described.

The tables in Chapter 2 and the related appendix tables are not alone sufficient evidence with which to make any expensive final public judgment, but they do represent either a reasonable start or a worthwhile check on the reasonableness of estimates begun in other ways. These tables were developed in May 1976 for a College Board Colloquium on College Admissions at Fontana, Wisconsin and were published in its proceedings.[30] The appendix tables also provide college presidents, admission officers, and other analysts of the high school student market with a practical set of tools to appraise recurring questions of admission, tuition, and financial aid policy in individual colleges.[31] Provision of this extra detail is also designed to permit researchers who have different assumptions about federal and state student aid policy to use the basic data to obtain answers for their own different purposes. Appendix A preceding the tables, provides illustrative questions and shows how to use the tables to answer them. Appendixes B and C provide the detailed tables. Appendix D describes how they were constructed.

Chapter 3 describes returns from a survey sent in March 1977 by the College Board to a representative random sample of 2,689 guidance counselors in public, parochial, and independent high schools in the United States. Counselors were chosen as the primary respondent group because they appeared to be the most easily identified nationwide group that closely observes teenage youth, how its career plans are made, and what its current problems are. The survey asked counselors the size of their 1977 graduating classes and how many of these students will go on to postsecondary education. It asked how many of those *not* going on might make a better next step in life, in the counselor's judgment, if they changed their minds and *did* continue. And of these, how many would fail to continue solely because they lack the funds?

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[30] Doermann, "Future Market for College Education," pp. 1-53.

[31] For discussion of a variety of single-college case studies, *see* Doermann, *Crosscurrents in College Admissions.*

The questionnaire also asked the opposite question: How many of their 1977 high school seniors are planning postsecondary education who would probably be better served if they went to work directly and did *not* continue their formal education? Finally, the counselors were asked to rank the importance of six different public finance issues that directly affect youth. These are issues discussed publicly and recently that might also require additional public spending.

The combined reply of 1,475 respondents was that an additional 4.7 percent of U.S. high school graduates in 1977 would be best served if they did continue their formal education but will fail to do so solely because they lack the funds. This estimate is close to the calculation (6.3 percent) derived as we shall see later in Chapter 2 by an entirely different method. The average amount of scholarship or grant aid that the guidance counselors estimated to be necessary to permit each of these students to go on was $1,220 per year. The counselors identifying most of this unmet need were usually located in the relatively large, urban school districts. The students they counsel tend to come from low-income families and are often black or Hispanic. A noticeable but smaller group reporting significant unmet need was made up of counselors in states with both low population density and relatively few colleges, such as Alaska, Arizona, Idaho, and Nevada.

Finally, it seemed that the validity of returns from guidance counselors showing they favored more public spending for postsecondary loans and scholarships could conceivably be questioned on the basis of the counselors' occupations alone. Persons whose livelihood is derived from our system of formal education were being asked to estimate whether more public and private money should be spent in that system. To determine the likelihood of self-interested bias in their responses, four other groups of people who work closely with youth, but who are not employed by school districts, were asked to respond to most of the same questions as the counselors. Four small samples, ranging in size from 140 to 200 each, were drawn representing the following groups (figures in parentheses are the percentage responding for each group):

1. Directors of education programs in state and county correctional institutions for youth (24%)
2. Directors of educational programs in YMCA's and YWCA's (7%)
3. Upward Bound Program Directors (26%)
4. State vocational and employment counselors dealing with youth (7%)

Although the returns were small and the results, therefore, only suggestive, the message was similar to that of the high school guidance counselors. The issues of further education and work are both important. Of the two, work seems slightly more important. In the respondents' judgment, about 10 percent of the high school graduates in the targeted programs were people who could profit from postsecondary education but probably would not attempt it because they lack the funds.

No new attempt was made in this study to sample student opinion across the nation. The sample size would have been large and the study quite expensive. Several such inquiries made in the early 1970s suggest that a student questionnaire inquiry probably would have yielded larger estimates of unmet need than either the demographic approach outlined in Chapter 2 or the guidance counselor replies in Chapter 3.

In 1972 the National Center for Educational Statistics commissioned the National Longitudinal Study (NLS), which Educational Testing Service in Princeton, New Jersey designed and carried out. A large random sample of U.S. high school seniors was surveyed by questionnaire that fall, and followed up a year later: 36 percent of all respondents who did not intend to continue formal education after high school said the reason was they lacked the necessary money.

In 1970 Dorothy Knoell surveyed more than 400 black high school graduates in each of five cities (Dallas, Fort Worth, St. Louis, San Francisco, and Philadelphia). Of the graduates not continuing formal education after high school, 37 percent said the primary reason was lack of money.[32] Critics of these student surveys and of similar ones point out that a number of important and real reasons for not continuing formal education may be embarrassing for a student to identify correctly in an interview or questionnaire. If a high school graduate is afraid he or she might not succeed in further academic work, or if that work appears distasteful, it may be easier for the student to say simply that lack of money is the barrier. No one knows the extent to which this possible distortion affects results of the NLS and others, but it could be large.

The introductory chapter and the summaries of Chapters 2 and 3 say that two separate and conservative methods of estimating aggregate demand for postsecondary education yield almost the same answer: About 5 or 6 percent more of each annual group of new U.S. high school graduates could make good use of postsecondary formal education but fails to do so because of lack of money. However, whether significant public expenditure on this problem makes sense depends not only on the internal logic of the question but also on how it stands in relation to competing issues.

Chapter 4 asks: What kind of issue is this? How can the worthiness of providing more postsecondary education be compared with that of providing more jobs both for adults and young people, or with that of broadening the coverage of our health care system? How can it be compared with welfare reform or with changing uses and sources of energy? Comparison and public choice clearly will be necessary, particularly if the rate of inflation remains an important factor in our economy.

A major determinant in the passage of the Higher Education Act of 1965 and its amendments was the belief that broadening of opportunity, both employment and educational opportunity, is the only fair way to proceed if the nation is to permit its members a worthwhile chance to determine their own futures. The 1954 U.S. Supreme Court decision on school desegregation and the major federal legislation on civil rights were also products of that belief.

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[32] Dorothy M. Knoell. *People Who Need College: A Report on Students We Have Yet to Serve.* Washington, D.C.: American Association of Junior Colleges, 1970.

A second argument for investing more public funds in higher education came from the universities themselves. Economists at the University of Chicago and elsewhere pointed out that investment in education could be considered a capital expenditure similar to the purchase of machinery in a manufacturing company. The initial costs of purchase are calculated, as are the value of benefits that may return to the purchaser during the economic life of the investment.

Anyone not accustomed to reading economics texts will find that acceptance of this particular notion—that paying for schooling is like buying a big machine—requires unusual faith and imagination. However, the idea does have respectable ancestry. Adam Smith described the notion in his *Wealth of Nations* (1776).[33] In 1964 Gary S. Becker of Columbia University published *Human Capital,* in which he calculated that the individual returns from investment in college education ranged from 12.4 percent to about 15 percent between 1939 and 1961.[34] That calculation made federal spending for college student aid look as if it could also be advocated as a hard-headed business investment. The Democratic administration and Congress at that time favored the new federal appropriations for student aid but were consistently accused of lacking prudence and good business sense. To those who favored more spending for student aid, the return-on-human-capital investment calculations and the rationale behind them seemed particularly attractive. The work of the human capital theorists was embraced quickly and given broad publicity. A whole generation of young university economists since then have made human capital theory their specialty and have produced a large and continuing literature.

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[33] "When any expensive machine is erected, the extraordinary work to be performed by it before it is worn out, it must be expected, will replace the capital laid out upon it, with at least the ordinary profits. A man educated at the expense of much labour and time to any of those employments which require extraordinary dexterity and skill, may be compared to one of those expensive machines. The work which he learns to perform, it must be expected, over and above the usual wages of common labour, will replace to him the whole expense of his education, with at least the ordinary profits of an equally valuable capital." Adam Smith, *The Wealth of Nations*. New York: Modern Library, 1937, p. 101.

[34] Gary S. Becker, *Human Capital*. New York: National Bureau of Economic Research, 1964, Table 14, p. 128.

However, now that the calculated returns on college education are said to be declining, the use of these calculations for designing public expenditure programs is being widely questioned. To some observers the timing of this questioning may appear as opportunistic as the widespread publicity the calculations received in the first place. To others the questions merely signal a delayed recognition of the fact that the calculation of returns to education may be an interesting exercise, but one that was never sufficiently rigorous to determine reliably our public spending policies in education. Chapter 4 argues strongly that current or future calculations of individual or social returns to college education should carry little, if any, weight in any major public decision about whether more money should be appropriated by state legislatures and the Congress for student financial aid.

Ordinarily an issue like this, involving government funds, must balance considerations of probable effectiveness, equity, and whether it can be afforded against competing claims for the available new funds. This issue today is no different in those aspects, and adds only one other important element because of the particular time at which it is raised. The world of higher education is now poised at the peak of an enrollment curve. It has never before been forced to endure declining enrollment for more than a year or two. The time to plan for this circumstance is right now.

2: THE OPPORTUNITIES

The first portion of this chapter describes one method of estimating how much worthwhile additional demand exists for postsecondary education among recent high school graduates, and how much it might cost to meet that demand. This method results in the estimate that approximately 200,000 high school graduates each year might go on soon after graduation to postsecondary training of virtually all kinds, but fail to do so because they lack the money. The net dollar expense of giving these graduates access to postsecondary education, after a phasing-in period of at least three years, could be as much as two billion dollars more than is now spent in state and federal support for student financial aid. The expense could be less or more, depending on how much money students and families themselves are asked to contribute toward the costs of education and also on the extent to which future revisions in student aid programs encourage needy students to attend either low-priced or high-priced institutions.

In Chapter 1, I observed that a thorough review of the operation of programs of postsecondary financial aid is timely. Such a review could help design how best to provide any additional new student aid, and appraise whether the various federal, state, and private programs are coordinated adequately with one another. Is the design and administration of the programs strong enough to withstand properly the pressures of dealing with larger numbers of students in a greater variety of institutions? Will the programs operate properly in the period of heightened recruitment competition for students when the basic enrollment pool shrinks in the 1980s? Now that these student aid programs have become the major source of federal dollars in the majority of colleges, are their allocation and review mechanisms still adequate? Or do they stimulate imbalance between public and private higher education (assuming one can define what "balance" should be)? Do they stimulate imbalance among trade schools, public two-year colleges, and four-year colleges? Are the programs of student aid sufficiently regulated and monitored to justify long-run public confidence?

Some may argue that a review of aid programs is not necessary. But the costs of no review are potentially so great that review effort, if well conducted, seems like minimal insurance. A number of reviews already have occurred during the past five years, but the most effective of these dealt mainly with administrative questions such as whether a single application form for demonstrating financial need could be devised for use by each of several programs, or whether a single set of tables could be constructed to estimate what a family ought to contribute from its income and assets toward a son's or daughter's education. Relatively few study groups have attempted to assess publicly whether the method of determining the amount of aid students now receive continues to be based on a fair sharing of financial cost among the student, the family, the school or college, and the state and federal taxpayer. Relatively little discussion has occurred about whether, in determining how aid is distributed, preference should be given either to students living away from home or to students commuting to college from home. Little discussion has occurred on the subject of whether needy students should be given more help than they now receive to attend expensive institutions.

Why has there not been more public discussion of this kind? With student aid appropriations rising for almost every kind of institution, perhaps the need to talk about policy choices and fair processes has not seemed urgent. Or perhaps discussion was avoided simply because these *are* sensitive and important long-run economic issues; the possible penalties of rocking the boat may be high. Or perhaps a strong network of acquaintance and trust does not yet exist among the most affected parties; no one sector wishes to plan and initiate a major review that might appear to be a bid for special advantage.

Our institutions of postsecondary education will continue to require public support for a long time. The primary mechanism for receiving this support is through public financial aid awarded to students on the basis of demonstrated individual student need. If there are important issues of student aid program design and fairness of allocation to be discussed, the best opportunity for this is right now, before the competitive recruitment and financial scrambles of the 1980s begin in earnest.

I also suggest that specific kinds of monitoring and evaluation practices ought to occur on a regular and comparable basis, to help assess periodically the health and accomplishment of the student aid enterprise. Such a process would also improve the quality of discussion about what to maintain and what to change.

Mapping the Market for Postsecondary Education

Before suggesting what ought to occur differently in the market for postsecondary education, one should first examine the market as it now exists. The method of examination that follows has the advantage of comprehensiveness. It also uses generally available data and so can be tested from viewpoints other than those offered here. But it has at least one important disadvantage: No current census or large-sample survey was available to track the postsecondary enrollment patterns of high school graduates for 1976 or 1977. Therefore, the enrollment patterns recorded by the NLS survey in October 1973 were projected forward to serve as the best available substitute. Uncertainty about the importance of this potential flaw led the College Board in 1977 to survey also a broad sample of high school guidance counselors. The College Board asked the counselors for their current estimates of enrollment patterns for 1977 graduating high school seniors. Chapter 3 describes the findings from this new survey. The two approaches, in Chapter 2 and Chapter 3, appear to produce very similar results, despite a difference in method of data collection and the passage of four years' time.[35]

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[35] Doermann, "Future Market for College Education," pp. 1-53.

Table 4. Estimated joint distribution of all U.S. high school graduates, 1976: Verbal scholastic aptitude and family income

Family income (Estimated parental contribution to college costs)	*SAT-verbal scores*			
	200-299	*300-449*	*450-800*	*Total*
Less than $8,680 (Less than $120)	292,000	271,000	71,000	634,000
$8,680 to $14,100 ($120 to $590)	223,000	296,000	116,000	635,000
$14,100 to $19,100 ($590 to $1,460)	178,000	302,000	154,000	634,000
$19,100 to $25,500 ($1,460 to $2,870)	139,000	297,000	198,000	634,000
$25,500 and over ($2,870 and over)	88,000	263,000	287,000	638,000
Total	920,000	1,429,000	826,000	3,175,000

NOTE: Table 4 is derived from Table B-5 in Appendix B on page 111, and combines the small-cell estimates shown there into larger aggregates for summary illustration. Estimates of possible parental contribution are from a CSS random-sample survey of 10,000 applicants for financial aid in the 1974-75 processing year, but applying 1975-76 CSS calculation procedures and methodology.

Table 4 provides a rough calculation, taken from the series of detailed estimates in Appendix B, of how the 1976 group of 3,175,000 high school graduates in the United States might be classified jointly by verbal scholastic aptitude and by family income. At each designated level of family income, in parentheses, is a College Scholarship Service (CSS) estimate of the amount of money a typical three-child, two-parent family at this income level might be expected to contribute toward postsecondary expenses from family income and assets, under 1975-76 CSS assessment methods. From Table 4 one may estimate, for example, that approximately 287,000 men and women who graduated from high school in 1976 are able to score 450 or above on the verbal section of the Scholastic Aptitude Test (SAT) and *also come* from families earning $25,500 or more. This income level represented the lower dividing line for the top fifth of U.S. families with 17-year-old children. The income classifications at the left margin of the table also define the quintiles of U.S. family incomes for families containing 17-year-olds. By CSS estimating procedures, the 287,000 high school graduates in the example above came from families where one might expect parental contributions of $2,870 or more per year toward postsecondary expenses of a son or daughter.

Before considering other elements in Table 4, I should briefly note the limitations of a table like this. First, the estimates cannot be precise. They are based on the sample survey results of the 1972 National Longitudinal Study. Sampling errors and errors of assumption in our projection work may mean that the individual estimates in Table 4 are incorrect by as much as 10 or 15 percent and that the small-cell estimates in the Appendix B tables may be incorrect by as much as 50 percent.[36] While this renders the estimates questionable for precise work, they are nonetheless useful for this discussion as well as for many kinds of practical estimating work. Furthermore, although family income is the best available nationwide index of ability to pay for college education, and although SAT-verbal scores are probably the best available nationwide tool for measuring aptitude for most kinds of postsecondary school and college work, one should not draw the conclusion that *individual* ability to pay or *individual* likelihood of satisfactory academic performance can be predicted sensibly by a two-variable table of this kind.

What else does Table 4 show? First, in the high-score column (SAT-verbal scores of 450-800), the number of students rises as income levels rise, up through each quintile of family income. In the lowest-score column, the reverse is true. The conclusion is not new: Verbal aptitude and family income are correlated.

Second, institutions that find difficulty enrolling enough recent high school graduates who both require little or no financial aid and who demonstrate high verbal aptitude, can see more clearly from the table where the difficulty lies. The group of 287,000 high school graduates in the above example, scoring 450 or better on the verbal section of the SAT and coming from families with $25,500 income or more, is only 9 percent of all high school graduates. And more colleges are trying hard to enroll more students from this part of the table. The pool is small. Recruitment competition for these students, which has been severe for some time, is growing more so.

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[36] See Appendix D for detailed notes on the design of Table 4 and the tables in Appendixes B and C.

Third, admission officers in schools and colleges that face the kind of difficulty noted above often point out that a larger student financial aid budget would help them meet future enrollment targets, assuming unchanging faculty expectations concerning the verbal aptitude of entering classes. The argument for more money is usually reasonable but not as compelling as it may often seem from that vantage point. Why? Because at least at the higher aptitude levels shown in Table 4, there are more than twice as many high school graduates in the top two quintiles of family income as in the bottom two quintiles. If one turns to Table B-5 in Appendix B and looks at the column for SAT-verbal scores of 650-800, the ratio in the highest-score range displayed can be calculated quickly as higher than eight (in the top two quintiles) to one (in the bottom two quintiles).

Postsecondary Enrollment Patterns

With these broad patterns in mind, one also can subdivide the estimates in Table 4 and take a closer look at the market. In Table 5 each cell is divided into two parts, high school graduates who go on to degree study in two-year and four-year accredited colleges within 18 months, and those who do not. (This is a slightly more limited definition of destination than the broader term "postsecondary education" used in other sections of this book.[37])

[37] It is difficult to define precisely the difference in enrollment represented by the designations "two- and four-year colleges" and "postsecondary education." The first definition has been used for some years by the federal government, and a usable time series of enrollment figures does exist. The second definition is newer and less well agreed upon. No official series exists that fits any of the various new and broader definitions. Inspection of Table 7 on page 63, however, suggests a

This subdivision is derived by using NLS survey data for 1972 high school graduates who responded to an October 1973 follow-up questionnaire. Again, the smaller the cell divisions in sampling the projection work of this kind, the greater the risk of error in estimating individual cell values.

Look at the lower right-hand cell of Table 5: High school graduates scoring 450 or higher on the verbal section of the SAT and coming from families with incomes of $25,500 or higher. In this cell, 239,000 are estimated to be "in college"—five-sixths of the total in the cell—and 48,000 are "not in college." To the extent an individual college wishes to enroll more of this market segment and succeeds, it will do so largely by reducing the enrollment of such students at other colleges.

If the same college has the funds and wishes to enroll able but needy students who would not otherwise attend college, the pool of these students appears surprisingly small. If one relaxes the constraint on aptitude and asks how many students, not in college,

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way of comparing in an approximate way that approach of Table 5 (which compares populations "in college" vs "not in college") with the somewhat broader definition of "postsecondary education" used in this book.

	Table 5 *(1976 estimated percent of all U.S. high school graduates continuing within 18 months)*	*Table 7* *(1977 estimated percent of all U.S. high school graduates continuing within 24 months)*
Enrolled in two-year or four-year colleges ("in college" for 1976)	59.4%	55.9%
In public technical schools or institutes	–	7.5
In private business or trade schools	–	4.9
"Not in college," or not enrolled in any of the above	40.6	31.7
Total	100.0%	100.0%

The current base rate of participation in U.S. postsecondary education by recent high school graduates may be described in different percentage terms, depending on the definition of postsecondary education—and perhaps on who is making the estimates. The degree of *expanded* participation which would be represented by an additional 200,000 students, is less ambiguous, however. Here, 200,000 additional students divided by 3,199,000 1977 high school graduates is an additional 6.2 percent.

Table 5. Estimated joint distribution of all U.S. high school graduates, 1976: Verbal scholastic aptitude and family income

Family income (Estimated parental contribution to college costs)	SAT-*verbal scores*			
	200-299	*300-449*	*450-800*	*Total*
Less than $8,680 (Less than $120)	98,000 (194,000)	142,000 (129,000)	50,000 (21,000)	290,000 (344,000)
$8,680 to $14,100 ($120 to $590)	85,000 (138,000)	167,000 (129,000)	86,000 (30,000)	338,000 (297,000)
$14,100 to $19,100 ($590 to $1,460)	75,000 (103,000)	182,000 (120,000)	117,000 (37,000)	374,000 (260,000)
$19,100 to $25,500 ($1,460 to $2,870)	64,000 (75,000)	190,000 (107,000)	156,000 (42,000)	410,000 (224,000)
$25,500 and over ($2,870 and over)	46,000 (42,000)	189,000 (74,000)	239,000 (48,000)	474,000 (164,000)
Total	368,000 (552,000)	870,000 (559,000)	648,000 (178,000)	1,886,000 (1,289,000)

NOTE: Each cell in Table 5 contains the same estimated number of high school graduates as the corresponding cell in Table 4 on page 34. The difference in the two tables is that Table 5 subdivides each cell into an estimated number attending college, and an estimated number not in college. The top figure in each cell represents estimated number of students in college, the bottom figure, in parentheses, represents the estimated number not in college. The method for subdividing the cells uses relationships established in the 1972 National Longitudinal Study (NLS) of U.S. high school graduates and a follow-up study of the same sample in the fall of 1973. This study was sponsored by the National Center for Educational Statistics (NCES). The controlling total number of students classified "in college" is the estimate projected by NCES in 1973 for the year 1976: total first-time degree credit enrollees in two-year and four-year colleges. Among students "in college" but not included in this table are full-time enrollments in nondegree programs. Those high school graduates who said in response to the fall 1973 follow-up NLS survey that they pursued post–high school education were classified as "in college" and distributed in each cell according to measured verbal scholastic aptitude and family income, in the same way these distributions were made for the series of joint distribution tables in Appendix B. Then, in each corresponding cell, the number classified as "in college" for Table 5 was subtracted from the total cell value in Table 4 to yield the "not in college" cell estimates, in parentheses, for Table 5. One imhave SAT-verbal scores of 300 or higher and also come from the bottom two quintiles of family income, the answer is approximately 309,000, or about 24 percent of all 1976 high school graduates classified as "not in college."[38] However, lack of funds is only one of several possible reasons why high school graduates do not attend college immediately or ever. For that reason the above estimate of "not in college" high school graduates probably should be cut at least in half to estimate the maximum size of potential effective demand in this portion of Table 5. This demand is estimated to make up about 10 percent of all the high school graduates not in college, and thus not more than 4 percent of all 1976 high school graduates.

High school graduates appearing in the left-hand column of Table 5, particularly those in the top two cells (the lowest two quintiles of family income) are the least likely today to be served by U.S. colleges. The financial need of these students often is accompanied by insufficiently developed reading and writing skills to survive the required academic pace of most colleges. The difficulties faced by such students in college are even greater if they also are required to spend many hours in paid jobs to meet expenses. Separate estimates from the 1972 NLS survey data suggest that about two-fifths of the high school graduates in those two top left-hand cells of Table 5 are black students. The predominantly black colleges in the Southeast and some business and vocational schools have had notable success in meeting the needs of some of these students. For most other U.S. colleges, this portion of the market still represents a largely unmet challenge and an important remaining test of how far the nation generally will progress toward the goal of universal or equal access to postsecondary edu-

[38] From Table 5, upper right-hand segment: 129,000 + 129,000 + 30,000 + 21,000 = 309,000.

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portant and untested assumption in this method is that high school graduates who go on to post-high school education within 18 months of graduation represent a similar population (as to verbal aptitude and family income) as all degree-credit first-time enrollees in two-year and four-year colleges. Another untested assumption is that the relationships shown by the NLS survey in 1972 and 1973 are stable enough over time so that they may legitimately be used for 1976.

cation, however that goal may be defined.

If federal and state policy were to underwrite a stronger attempt to move toward equal access to postsecondary education, one might reasonably seek to raise the proportion of high school graduates who go on to college to about 67 percent within five years (assuming the present proportion is 60 percent as in Table 5), or a shift of about 200,000 high school graduates from "not in college" to "enrolled in postsecondary institutions." It is possible to estimate roughly from the same table that the increased availability of funds alone might attract about 120,000 of these students from the bracket of SAT-verbal scores of about 300 to 449, for whom substantial academic program changes might not be required at the postsecondary level. The estimated remaining 80,000 students, at aptitude score levels between 200 and 299, probably would need both money and the availability of new programs, including counseling and extra skills training in reading, writing, and mathematics. Neither the total costs of providing such new programs, nor the allocation of responsibility for paying for them, has been estimated in this study.

If today one projected for 1984 the number of high school graduates going on soon to postsecondary education, *without* a change in public funding policy for student financial aid, that number might move from about 1,886,000 (1976) down to 1,612,000 (1984), a loss of 274,000 entrants or 15 percent. *With* the recommended change in public policy, however, the net loss of new entrants from this source might be only about 74,000 students, or 4 percent, compared with 1976.

Estimating the New Costs

A rough estimate of state and federal cost in need-based student aid to support the additional 200,000 students could be as high as two billion dollars a year at 1977 prices. The basic arithmetic of the estimate can be worked out in the way shown on the next two pages.

Several careful reviewers of the draft manuscript of this book said they were not satisfied with this calculation. They noted in

ITEM	COMMENT
1. 200,000 more high school graduates each year	Derived above from inspection of Table 5.
times	
2. Three	To account for four classes in college per year (after a phase-in period), less an allowance for dropouts. Given the new counselor survey estimate (final footnote in Chapter 1) that 87 percent of these students might *not* enroll in four-year colleges, a factor of 1.5 or 2 might be more reasonable here.
times	
3. $1,700 average public aid per student per year	Estimate could vary up or down significantly depending on assumptions concerning relative enrollment emphasis in inexpensive or expensive colleges, and on amount of family contribution and self-help expected. This estimate is close to the estimate made by high school guidance counselor in Chapter 3, which appeared also to assume new enrollment would be in relatively inexpensive colleges and schools with relatively low self-help requirements.
times	
4. Two	This final adjustment factor acknowledges the impossibility of targeting need-based grants and scholarships solely to those high school seniors and recent graduates who would not have attended college without them. That targeting process would require a prior

equals

$2.04 billion a year

COMMENT

and reliable mind-reading system. Work-study or loan funds administered through schools and colleges may not require such a large adjustment factor, but they also probably have less power by themselves to encourage students to continue their education.[39] Therefore, some student aid funds would serve to stimulate new opportunity, and some to defray more fairly the expenses of needy students who are already enrolled.

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39. *See* Humphrey Doermann, "Lack of Money: A Barrier to Higher Education," *Barriers to Higher Education.* New York: College Entrance Examination Board, 1971, pp. 139-142. Other fragmentary evidence suggests that about half of the proposed new public student aid expenditures may be expected to result in additional enrollment. This evidence comes from different places and times, and so cannot be viewed as directly transferable. John Bishop and Jane Van Dyk, in "Can Adults be Hooked on College?", *Journal of Higher Education,* Vol. 48, No. 1, January/February 1977, pp. 39-59, estimate that relatively generous flat grants are the most effective way of increasing adult enrollment, and that the Vietnam GI Bill was responsible for a major component (about 40 percent) of the growth of male adult enrollment during the 1960s. The estimate is made by regression analysis of a sample of 57,689 responses to the 1970 U.S. Census by married men and women, 25 years old or older, living in metropolitan areas.

A 1976 poll of Michigan high school graduates conducted by the College Board and the Michigan State Board of Education contains the following statement and possible check-off reactions to it. The statement was: "I cannot afford to continue my education." The possible reactions were: (1) "This statement doesn't fit my situation at all"; (2) "Fits my situation somewhat"; or (3) "Fits my situation very well." Of all the high school graduates responding, 40 percent had not continued formal education after high school. Of those, just over a half (52 percent) checked either the second or third possibility—indicating they thought money was a significant factor in their *not* being now in formal postsecondary programs.

item 2 that, given the probable heavy flow of new enrollees into public two-year colleges and technical institutes and into private schools of various kinds, the estimate of the number of high-school-graduate cohorts who need additional postsecondary education financing in any one year is likely to be about 1.5, rather than the 3 shown in the calculation. They also note correctly that $1,700 may not be a reliable estimate, and that it depends on the mix of institutions attended. They note too that the estimate for item 4 may be unreliable and, if anything, may be too high. Therefore, by reestimating the factors outlined, they would estimate an annual cost, after phasing in, of less than one billion dollars, not two billion dollars.

I decided not to revise the calculation, even though these reviewers may well be correct. Historically the costs of proposed public expenditures generally have been underestimated. Also, several potential side effects not included in the calculation might further increase costs. For example, inflation in prices has occurred throughout the 1970s and probably will continue. A six percent inflation rate over five years would mean that an item costing $1.00 in 1977 will cost $1.33 in 1982. Another possible side effect is that some parts of the postsecondary system might raise tuition rates as students acquire more purchasing power through new financial aid sources. That could make need-based student aid, per student, more expensive if it is to achieve the same estimated enrollment impact.

Finally, a number of reviewers note correctly that legitimate potential demand cannot be converted into actual demand solely by increasing student aid authorizations. The authorizations are necessary and are probably the most expensive aspect of increasing actual demand, but they may not be sufficient. Other related administrative matters may need attention: to improve advising

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Finally, a survey of grant recipients under the Illinois State Scholarship Commission's grants program indicated that in 1970-71, 51.4 percent of the state grant recipients believed they would not have been attending college full-time if it had not been for receipt of these funds; in 1973-74, 58.1 percent responded this way. *See* Joseph D. Boyd and Robert H. Fenske, *A Longitudinal Study of Illinois State Scholarship Commission Monetary Award Recipients (1967-1974)*. Deerfield, Illinois: Illinois State Scholarship Commission, June 1975, Part 2.

systems, to improve the quality and availability of program and financial aid information, and to make sure the information is delivered and understood at the point where it is needed. These activities could add costs not illustrated in the basic calculation. Since these matters have not been carefully studied or priced, it seems preferable to leave the example in its oversimplified, and it is hoped, slightly overpriced form.

Can the nation afford this two-billion-dollar expenditure? If one expects continued real growth in the gross national product and somewhat slower growth in the needs of postsecondary education (resulting from steady-state or shrinking enrollment), an adjustment of the kind suggested here could be accomplished within a few years without major dislocations elsewhere—assuming everything else remains equal.[40] As to whether this should command high public priority, Chapter 4 will discuss the major ways in which this recommendation for support might be compared with the major competing considerations.

Rather than coming to a "right" answer, however, the cost estimating example shown serves better to illustrate questions that need homework and debate. Even if I have correctly identified the new groups that might be well served by American postsecondary education, the costs and benefits of any new student aid programs depend a great deal on program design.

1. At what kinds of institutions would these new enrollees be best served? (How many years of education per enrollee should be provided for in item 2 in the calculation?

2. What mix of low-expense and high-expense institutions is involved? What, therefore, is an appropriate weighted average student expense budget?

3. Is too much or too little self-help asked of families and students at present? (These two questions help determine whether item 3 in the calculation is a reasonable estimate.)

4. If a change is made in program design to serve appropriately

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[40] *See* Carnegie Council for the Advancement of Teaching, *More Than Survival*, pp. 118-124. *Also see* Carnegie Council for the Advancement of Teaching, *The States and Higher Education: A Proud Past and Vital Future*. San Francisco: Jossey-Bass, Inc., Publishers, 1976, pp. 1-4.

the "target population" (students not continuing postsecondary education who could profitably attend if funds were available), what level of expense will probably *also* be required to improve student assistance programs for those *already enrolled?* (The "final adjustment factor" of two, in item 4 in the illustration could conceivably be significantly lower or higher, depending on what mix of aid is made available and under what terms.)

A Review of Student Financial Aid Programs

The questions just raised suggest the points of highest leverage in our system of public financial aid for students in postsecondary education. The answers to these questions determine the system's ultimate course and, therefore, likely will come under close and recurring public scrutiny.

The *Chronicle of Higher Education* in October 1977 published a major four-part series on postsecondary student aid in the United States. The articles document both significant accomplishment and signs of trouble. The fourth article in the series describes the work of Leo L. Kornfeld, former executive in a New Jersey data processing company, who was appointed in July 1977 to head the Bureau of Student Financial Assistance in the U.S. Office of Education. This is the office that now administers all the major federal programs of undergraduate student financial aid.

> "When he came to the Office of Education in July, one of Mr. Kornfeld's first requests was for a list of who receives the Office of Education's student-assistance programs – broken down by state and type of institution.
>
> "Instead of a simple three- or four-page answer to what he thought was a 'routine' question, Mr. Kornfeld received hundreds of pages of nearly indecipherable computer printouts.
>
> "What seems to concern him most is that, despite the number of years many of the student-assistance programs have been operating, answers to the simplest questions are hard to come by: Who is receiving which kind of federal student aid? Where do the recipients live? What kind of colleges do they attend? What kinds of students benefit more than others? . . .
>
> "Today Mr. Kornfeld says he can get the answer to almost any

> question he poses . . . 'When I ask a question, people scurry around as fast as they can to get me the numbers,' he says. 'The unfortunate thing is that if I ask the same thing again three weeks later, I may get a different set of numbers. There is no consistency.' "[41]

More immediately worrisome than consistency of analytical data, the recent and quick expansion of postsecondary student aid appropriations appears to have disguised for a time some of the conflicts and the parts of the system which no longer fit together. As suggested in Chapter 1 a thorough review and tune-up of our programs of postsecondary student aid should occur before the predicted decline in enrollment begins and perhaps also before significant additional spending for student aid takes place. Such a review might help rationalize the present systems of federal and state aid and also identify how any major new money should be spent.

Two kinds of questions require attention. First and most difficult are the controversial questions of how responsibility to govern and responsibility to pay are allocated. Less difficult, but still important, are mechanical and administrative questions, such as how to standardize regulations in the several federal loan programs so that "delinquency" and "default" and "due diligence requirements" mean clearly the same thing from one program to the next. Several private and federal commissions and advisory groups have analyzed administrative questions recently with encouraging success. Commissions usually have been less successful in resolving the questions of who should pay how much and who should receive how much. The National Commission on the Financing of Postsecondary Education, for example, spent 14 months and $1.5 million in 1972 and 1973, but concluded in the end that it was unable to make a comprehensive set of policy recommendations to the President and the Congress.[42] The Carnegie Council on Policy Studies in Higher Education has made an extremely useful start in describing issues and in suggesting broad outlines for resolving them. But this work needs to be carried further if a national student aid program is to be designed that combines optimum student access to postsecondary education with assurance of efficient use of taxpayers' money. This work eventually should include both the arms-length tasks of analysis and review and proposal of agendas, and the political translation into public and legislative consensus. Its scope should include both broad principles and outlines and also some resolution of the elements that are both intricate administrative items and policy-determining leverage points. These matters are sufficiently intricate and controversial that they appear to require a separate analysis and design effort organized especially for that purpose—rather than brief treatment as a relatively small set of items on the agenda of a broad-purpose commission or study group.

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[41] Anne C. Roark, "What Changes Ahead for Student Aid?", *Chronicle of Higher Education*, Vol. 15, No. 8, 25 October 1977, p. 5.

[42] National Commission on the Financing of Postsecondary Education, *Financing Postsecondary Education in the United States*, Washington, D.C.: U.S. Government Printing Office, 1973, pp. 3-9 and 361-365.

The following list of questions suggests the start of such an agenda. The questions alone may be enough to annoy or anger most readers, but they are not self-regulating issues and so need further attention unless we are willing to watch our whole student aid system begin to unravel.

> 1. Is the rationale and process by which families are assessed a contribution toward sons' or daughters' postsecondary education sufficiently open to public scrutiny and professional peer review?

Before 1976 several systems existed for determining how much money a student's family would be expected to contribute toward his or her education if he or she was applying for institutional or public financial aid. The longest-established system and service is operated by the College Scholarship Service. Another newer but widely used service agency for many colleges and states is the American College Testing (ACT) Program. Recently the federal government began to operate a third system for its Basic Educational Opportunity Grants (BEOG). Each system operated on the same assumption that the more demonstrated financial need a student has, the more he or she should receive toward legitimate expenses of education. Also, the more a family receives in income each year—adjusted for numbers of children, special medical and education expenses, and for differing assets – the more the family should contribute toward the expenses of postsecondary education of the children. The Keppel Task Force on Student Aid Problems, and subsequent coalition efforts chaired by the Education Commission of the States and the American Council on Education, have recently consolidated the first two of these three systems into a uniform method of estimating parental ability to pay for college and have devised a committee structure and a process by which the expected family contribution tables may be reviewed each year and brought up to date.

In the near future, this helpful change ought to be accompanied by a change in the documentation and public availability of the economic and statistical methods by which the current expectation curves are constructed. The detailed rationale underlying any proposed change in the curves also should be documented for public discussion. The financial consequences of changes in these curves – for families, schools and colleges, and for taxpayers – are becoming too large for this part of the machinery to operate as privately as it has in the past. Calculated across all colle[illegible] institutions, for example, a reduction of $100 in the [illegible]bution made by all families of aided students would cost U.S. taxpayers half a billion dollars – assuming public aid fully replaced the lost support from families.[43]

During the past ten years the expectation tables have tended to shift the burden of postsecondary education from parents to taxpayers, assuming that what parents actually do contribute is close to what the expectation curves suggest. Other scattered evidence suggests that in many instances – particularly in expensive colleges – students themselves, not public grants, pick up the slack. Recurring studies should be made to determine the extent actual practice and recommended practice of families may differ in paying for sons' and daughters' postsecondary education. Such studies have not recently been conducted in any rigorous or comprehensive way.

[43] Alan P. Wagner, "Unmet Need, Revisited: Comparing the Costs of Attendance and Available Financial Resources of 1977-78 College Students," unpublished paper, October 1977, p. 2.

As the Appendix tables in this study show, families are still expected to make heavy contributions to support the postsecondary education of their sons and daughters. Additional public expendture has significantly broadened educational opportunity. This does suggest, however, that family expected-contribution tables are more a product of history and judgment than of pure science. Once a small change in judgment becomes very expensive for someone – and yet change and adaptation continue to be necessary – the reasoning process, down to its very roots, ought to be strong enough to be published routinely. This seems particularly important now that we are about to enter a period of predictable controversy concerning the structure and financing of American higher education.

> 2. Are the self-help expectations for students set right in the major federal and state programs of student financial aid? Do the present rules channel more grant assistance than is appropriate to students in the relatively inexpensive commuting colleges and institutes?

Although not true of four-year residential colleges because a student's total expenses are higher there, it is becoming true in some commuter colleges and institutes that combinations of federal and state grant aid can fully meet students' total calculated need without any student contribution from earnings or borrowing. This is most likely to occur in states where there are strong state-sponsored programs of grant aid and where no action has been taken to require that the first financial help students receive is self-help.

During the 1950s many private colleges and some public ones realized that if they were to remain accessible to students from all income levels they would have to devise more effective ways of stretching the usefulness of their available scholarship dollars. The principal vehicle for this was to require, for the first time, that aid for needy students be "packaged" in predictable ways. Student aid funds were made available only to those needing money and in the minimum amounts necessary to permit attendance. Colleges asked that the first contributions in any student's budgeting plans be a reasonable family contribution based on assessment of the family's means and other obligations, followed by the student's own contribution from loans or earnings. The total expense budget minus those two contributions equaled the maximum level of grant funds that could be awarded. In order to stretch scarce grant funds, colleges usually designed a package that included loan, job, and grant assistance, rather than relying on scholarship grants alone. When an individual college controlled all those sources of assistance, the aid package could be administered fairly. The available funds also could be stretched to cover as many needy individuals as possible.

Not all aid packaging systems, of course, followed the procedures just outlined. Some awards were given without regard to financial need for musical achievement, athletic skill, academic talent or because the student came from a particular town or family or had a relative in a particular fraternal order. Nonetheless, the new pattern of need-based aid became the predominant one in the expensive colleges, and its major assumptions became public policy when the public programs of student aid were authorized and grew larger in the 1960s.

The more recent provision of aid from several sources – institutional, state, and federal – has meant that the early and efficient packaging principles no longer are required in every kind of situation. Recent experience in Minnesota, for example, suggests that a simple change in the packaging rules may significantly change the coverage of public student aid funds and may also affect which sectors of higher education benefit the most.

The Minnesota state scholarship and grant program provides funds to needy students attending postsecondary institutions in Minnesota. Minnesota attempted to provide one-half of calculated need during the 1976-77 academic year, up to a maximum of $1,100 per student. For 1977-78 the rules were amended to better control how Minnesota student aid was packaged in relation to other sources of aid. The new legislation says that in calculating student budgets and student need, the assumption should be made that all needy students would apply for and receive a federal Basic Educational Opportunity Grant (BEOG). Also, no student may receive more than 75 percent of his or her calculated need from a combination of BEOG and state scholarship or grant. Thus, 25 percent of the total student budget, must come from the student's own earnings or loans.

Table 6 shows what happened. At the same time as the total dollars in the program increased 12 percent, the number of students who were aided increased 24 percent. Private colleges received the greatest relative gains in total dollars, while the lower-expense public two-year colleges lost state scholarship and grant funds, although more individual students were aided in every sector. The Minnesota experiment may provide a fair example of

Table 6. Minnesota state scholarship and grant allocations, 1976-77 vs. 1977-78 (as of November 30, 1977)

Institution grouping	*1976-77 Dollars spent*	*1977-78 Dollars spent*	*Percent change*
Private colleges	$ 6,626,171	$ 8,698,910	+31%
(mostly four-year)	(6,776)	(8,807)	(+30%)
	[$978]	[$988]	[+1%]
University of Minnesota	$ 3,410,495	$ 3,624,129	+6%
(four-year)	(4,341)	(4,992)	(+15%)
	[$786]	[$726]	[−8%]
State University System	$ 3,313,943	$ 3,320,867	−0.2%
(four-year)	(4,395)	(5,490)	(+25%)
	[$754]	[$605]	[−20%]
Community colleges	$ 1,450,690	$ 1,382,375	−5%
(two-year)	(2,107)	(2,518)	(+20%)
	[$689]	[$549]	[−20%]
Area vocational-technical institutes	$ 1,463,307	$ 1,212,083	−18%
	(2,541)	(3,195)	(+26%)
(two-year)	[$576]	[$379]	[−34%]
Totals	$16,264,606	$18,238,364	+12%
	(20,160)	(25,002)	(+24%)
	[$807]	[$729]	[−10%]

NOTE: Number of awards appears in parentheses; average dollar amount of each award appears in brackets.

SOURCE: Minnesota Higher Education Coordinating Board.

what might occur if other states with strong scholarship and grant programs were to require a self-help calculation in every kind of postsecondary student aid situation.

Among financial aid officers in two-year public colleges, two different views exist today. One viewpoint is that a student who receives a well-respected baccalaureate degree will not be handicapped if he or she also graduates several thousand dollars in debt, but that freshmen in community colleges, who may not stay on to receive a degree and in any event may not enter high-paying occupations, are less able to cope with the burden of heavy borrowing. The opposite viewpoint is that if a noticeable amount of student self-help is not required, the government in effect pays students to enroll in formal education: Since students can remain enrolled in some institutions without much hard work, this policy turns those colleges into warehouses and permits students to depend on the government and to learn that they need not work.

Another difficulty in packaging aid occurs at commuter colleges when the system must take account of several kinds of living arrangements: single students living at home, as they did in high school; single students living away from home; married students with working spouses; married students with children and unemployed spouses; and others. Anyone designing a student aid system can ignore these different circumstances and merely specify a single, standard, student expense budget. This, however, allows the relative economic burdens to fall unevenly across these different groups. On the other hand, the designer can allow for real differences but accept the risk that educational dollars may sometimes pay for day care or family support.

None of these questions are impossible to resolve. Fair solutions can be worked out if the questions are approached in a comprehensive way. But even more is at stake than fairness to individuals. Many colleges, public and private, construct annual institutional budgets on the basis of enrollment. Many lower-priced public colleges, already facing the prospect of declining enrollment in the years just ahead, may hope that self-help provisions in student aid packages may remain generally less demanding than at most of the expensive colleges, and so continue to provide some help in student recruitment. This may or may not be good public policy.

> 3. Many postsecondary schools and colleges endorse provision of increased student aid from public sources, to be awarded to students on the basis of demonstrated need. Should this not also imply the desirability of more self-discipline on the part of these colleges in the requirement of need-based criteria for awarding their *own* scholarship and grant funds?

During 1976 and 1977 the College Scholarship Service surveyed 940 member colleges to attempt to determine how many were awarding scholarships *not* based on demonstrated financial need, and whether the practice was increasing or not. Of 398 institutions replying (30% public, 70% nonpublic), 281 or 71 percent said they were currently granting "merit" or "no-need" awards. This represented a noticeable increase from the 54.5 percent that gave this answer in a similar 1974 survey conducted by Robert P. Huff, Director of Financial Aid at Stanford University. The trend, taken alone, is not necessarily worrisome, but the total money value of "no-need" awards in the surveyed group of colleges also has increased during the past 11 years, from 16 percent of all awards to 29 percent in 1976-77.[44] This does seem to warrant concern, particularly when one reflects that members of the CSS almost by definition are committed to the use of need analysis in student aid, and the 42 percent of the surveyed colleges that replied to the recent questionnaire probably were among the most committed of these —although this last point is only speculation. If true, however, the CSS survey probably more nearly reflects "best" performance than average performance among colleges.

If the nation's families and taxpayers were prosperous enough together to support both the basic educational expenses of all its students and also to award prizes of various kinds to many of them, the no-need trend in the CSS survey might represent a happy prospect. It does not seem sensible, however, for the practice of awarding prize scholarships and grants to grow unchecked while the basic promise of educational opportunity remains unfulfilled for many qualified persons. Since one of the principal reasons the "no-need" practice is growing is a desire to recruit students in a competitive market, pressures to expand the practice may grow stronger as the total number of U.S. high school graduates begins to shrink in 1978.

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[44] David A. Potter and Alexander G. Sidar, Jr., *No-Need/Merit Awards.* New York: College Entrance Examination Board, 1978.

It is possible, however, that the increase in prize scholarships will level off and decline without any outside intervention. Indeed, the practice may experience the same cycle as premium stamps in supermarkets. The first markets to employ trading stamps benefit, since they have a competitive advantage. Other supermarkets that offer stamps later find the advantage for them is not as great. Once every supermarket offers stamps, they become a drag on all supermarkets' profits, and the practice eventually subsides. I hope that colleges will experience the same process with no-need awards, since at present there seems to be little specific pressure or authority, short of withholding public funds, available to reverse the no-need trend among student aid awards made from colleges' own funds. But while I hope for a cure without intervention, I would not bet on it.

> 4. Do our public programs of postsecondary student aid provide qualified students with adequate choice between expensive and inexpensive institutions? The assumption underlying this question is that, if additional funds were available for needy students, more students probably would enroll in four-year institutions than now do, and among those, more would enroll in nonpublic institutions.

In 1950 roughly half the nation's college students were enrolled in private colleges. By 1980 the fraction will be less than a fifth. Private or nonpublic enrollment will have increased somewhat during the period, while most of the expansion took place in public colleges and institutes. During the past 15 years the nation has taken great steps toward equalizing access to postsecondary education, particularly at institutions that are relatively inexpensive. How important is it to stimulate also a greater equality of choice for students among different kinds of schools and colleges, some of which are very expensive?

I do not claim that expensive schools are superior to inexpensive ones, nor that either public or private institutions are superior to the other. Rather, the issues of individual choice and systemic balance arise from our unusual national history. American postsecondary education is one of the very few national systems that has been strongly mixed in control – public and nonpublic. One can make a strong argument that this mixed system – sometimes cooperating, sometimes competing – has produced a healthier result than an only-private or only-public system could have produced. I noted in Chapter 1 the estimate by William Bowen that the United States invested more funds in postsecondary education than any other nation because, for one reason, it operates under a mixed system of public and private control. Why is the balance between the public and private enrollments shifting as rapidly as it is? Is the shift worrisome? We cannot "prove" it is a bad thing if the private sector of postsecondary education decreases in absolute or proportional size to the point where it generates relatively little external effect. But neither can anyone else demonstrate that the loss of genuinely mixed control would not cause great damage in the long run. The Carnegie Foundation for the Advancement of Teaching notes in its 1976 study, *The States and Higher Education*, the following contributions of the private sector:

> 1. It reduces the burdens that might otherwise fall on state tax revenues.
>
> 2. It increases competitive pressure on public institutions for effective performance, and trains a disproportionate share of teachers for all colleges.
>
> 3. It suggests "free market" standards for faculty salaries and for teaching loads.
>
> 4. It has special contributions to make within the total system of higher education – particularly those in research, and in providing hospitality to the preservation of diverse religious and ethnic traditions.[45]

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[45] Carnegie Foundation for the Advancement of Teaching, *The States and Higher Education*, pp. 10, 41.

One reason that public enrollments have grown faster than private is the growing cost difference presented by the different sectors to students and their families. The net cost difference is not great for low-income students. While at most private institutions such students face annual tuition charges that are between $1,000 and $3,000 higher than at public institutions, the availability of student aid based on financial need can equalize the net costs or even make private education less expensive than public. This aid comes both from public financial aid programs and from colleges' own tuition and other funds. Data compiled by the Stanford Research Institute indicates that during the early 1970s a *higher* proportion of all private college students than four-year public college students came from families with incomes of $9,000 or less: 13.3 percent vs. 11.3 percent, respectively.[46] Available tabulations for individual states suggest the same pattern. One of the reasons many private colleges ran deficits during the early 1970s was their determination that they should not become places only for the rich and that they should provide additional funds of their own, along with public funds, to aid low-income students.

It is generally true, although somewhat oversimplified, that the difference in net price between public and private postsecondary education encourages enrollment in public institutions for families with incomes of about $20,000 and up.[47] This is the "middle-income problem" referred to by high school guidance counselors in the next chapter, or the "tuition gap," as the problem is referred to by other observers. Unfortunately, the differences in language hinder a useful discussion.

At private institutions, "tuition" describes a user fee that pays for most of the costs of instruction and includes in it the cost of a student financial aid program. At public institutions, because they are state supported, "tuition" may appear to represent an unwelcome double tax that should be increased as little as possible and only when everything else fails. For most of our history, low tuition in our public colleges was regarded as the key to preserving an "open door" to all citizens. Little wonder that suggestions from the private institutions that the public sector raise tuition charges and plow back some of the new income into need-based student aid have not been welcome. For the public colleges and schools the suggestions imply that public colleges should weaken themselves in order to allow private institutions to compete more successfully. For the private colleges, on the other hand, the suggestion clearly represents the least expensive means for taxpayers to enjoy an open-door policy throughout all of postsecondary education, both private and public. The healthy diversity of our institutions is endangered if this, or something with similar effect, does not occur. It is ironic that the financial health of private institutions is in jeopardy because their tuition and aid policies are advantageous to the needy, while public institutions, claiming they represent the open-door policy, give greatest pocketbook advantage to middle and upper-income families.

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[46] *Student Aid: Descriptions and Options*, research memorandum EPRC 2158-27 (Menlo Park, California: Stanford Research Institute, 1975), quoted in Davis, Jerry S., "Estimating the Financial Needs of Students Deterred from Postsecondary Education Due to Lack of Financial Resources", mimeographed memorandum for the College Entrance Examination Board, New York, 1976, p. 4.

[47] *See* Michael S. McPherson, "The Demand for Private Higher Education," Figure 3 ("Estimated Cost Gap Between Public and Private College, As Percent of Family Income").

Does this problem demand more attention? The answer may depend on whether the diversity of choice provided by the private sector appears to be either in jeopardy or insufficiently available to qualified students. It also depends on the cost of making a change. As suggested above, probably the lowest-cost method for all taxpayers is to raise tuition fees at public institutions and plow much of the new income back into need-based student aid. A somewhat more expensive plan (because it does not make the net price of public education higher for middle- and upper-income families) would be a program of state or federal tuition remission grants in private colleges, awarded according to student financial need. Another approach might be to raise the maximum permissible grant under the state and federal student grant programs—which would permit more students to make high-priced choices without abandoning the principle that aid be awarded on the basis of need. Finally, most expensive and probably least effective, would be a tax credit plan that permits taxpayers credits against tuition payments in all kinds of schools. This kind of plan usually ignores the public economy of requiring that aid go only where needed. It also tends to aid the poor too little and to aid the rich more than is necessary.

> 5. What kind of reliable, public monitoring system should be designed to assess periodically the health and impact of our student aid programs? Who should operate such a system?

The brief account of the problems of Leo Kornfeld in his new job may be discussion enough of this question. Or perhaps it is enough to note the thin spots in the evidence in a book like this. In a national financial aid enterprise the size of ours it is important that we should know more comprehensively and more quickly what we are accomplishing and also what could be done better.

A reliable mechanism must somehow be developed for reviewing in an organized way, at least annually, the large amount of data on student aid already being collected by diverse public and private agencies. A comprehensive review could also help identify the important weak spots in the present availability of reliable and useful information. At the very least, such an annual data review should include trends in school and college costs (by type and region), trends in enrollment patterns, including information on both institutional and student characteristics, and trends in sources of student support. Also required is a review of where the aid (need-based and other) is going – by type of student, by state or region, and by type of postsecondary institution. Finally, the review should encompass related trends in the nation's economy and demography that may have a bearing on enrollment patterns in postsecondary education.

Public policy for determining how much to spend on what kinds of student aid is generated within a complex system of economic and noneconomic crosscurrents, and any policy analysis that appraises only a few variables at a time likely will be inadequate. The argument for a continuing and reliable mechanism is based on the assumption that only in this way can we begin to learn which unpredicted results are the fault of bad reasoning, and which the result of nonstandard or incomplete data. Whether both processes of assembling data and analyzing policy should be undertaken by the same agency or company or commission is not certain, but the issue is important. The process should undergo periodic peer review and also make its data and analysis public.

In addition to the review suggested, there is a need to better understand the circumstances and plans of high school graduates who do not elect postsecondary education. Periodic, but probably not annual, sample studies of high school graduates and dropouts, designed to understand what their plans are and why, might help serve the purpose. These studies could help develop a clearer idea of whether further provision for postsecondary education is needed, and if so, what kind. The studies should inquire about students' current plans, and then follow up later to determine what actually happened, so that eventually work of this kind also develops more reliability than it now has as a predictor of trends. The NLS has been one example of an extremely worthwhile design of this kind.

Finally, as suggested by this list of questions, the need exists to review periodically the processes of how student aid policy is made, and how the money is actually awarded. This need somehow seems less standard or predictable than the others noted above. Perhaps the process questions are best left to one-shot reviews that are tailored specifically to a perceived set of emerging problems.[48]

Other important questions that should be reviewed but do not involve as strongly competing claims between different income classes or sectors of postsecondary education include the following.

> 6. Can the federal and state student loan programs be improved, simplified, and standardized?
>
> 7. On both financial and educational grounds, should not the federal College Work-Study Program be expanded and become a larger share of individual students' financial aid packages?

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[48] Letter from Rex Jackson to Humphrey Doermann, January 18, 1978.

8. Can improved means be found to encourage portability of funds under state scholarship and grant programs? This would permit students to use these funds at institutions outside their home state.

9. Has the federal government achieved a workable and appropriate method for overseeing accreditation of those business and trade schools that are now eligible, or wish to be, for federal student aid programs, but which are not collegiate degree-granting institutions?

10. Is timely and sufficiently complete information flowing adequately to students and prospective students? If not, what workable remedies exist?

3: THE NEW EVIDENCE

The 1977 Counselor Questionnaire

In order to test the current usefulness of the demographic analysis in the previous chapter, the College Board decided to survey a random sample of 2,689 secondary school guidance counselors throughout the United States. The 1976 joint distribution tables in Chapter 2 relied on census estimates of family income, projections of numbers of high school graduates, and national SAT-verbal scores. All these are derived from national data and are historically comparable. But unfortunately the National Longitudinal Study data that was used for projecting the college enrollment patterns of recent high school graduates is now five years old. The actual patterns could have varied in unexpected ways, and as this study project began to lead toward current policy recommendations, more recent benchmark data seemed desirable. A questionnaire to counselors, if sufficiently reliable, would also permit analysis by region, by type of school, and by type of student body.

Results from the March 1977 counselor survey largely confirmed the demographic analysis from the joint distribution tables. The counselor estimates of the number of high school graduates who plan to continue full-time formal education within 24 months of high school graduation were close to those in Chapter 2. The 1977 counselor estimates also were close to the earlier estimates of the number of students who probably will not go on to postsecondary education, who would be better served if they did, but who will fail to do so primarily because they lack the money. The estimate from Chapter 2 was that 6.3 percent of U.S. high school graduates in 1976 could be classified that way; the 1977 counselor estimate was 4.7 percent.[49]

Table 7 shows the postsecondary enrollment plans of all U.S. high school graduates, assuming that the 279,616 students whose plans were specifically estimated by the counselors in the 1977 questionnaire survey are representative of all 3,199,000 U.S. high school graduates that year. Appendix E on page 131 explains how the survey sample was drawn and provides samples of the original questionnaires.

It is not surprising that the counselors indicated that most of the estimated potential increase in postsecondary enrollment would be experienced at public technical institutes, private trade and business schools, and two-year colleges. Table 8 shows that only 13 percent of the potential additional students would be best served, in the counselors' judgment, by enrolling directly in four-year colleges.

If these counselor estimates are correct today, and if relatively little change takes place in the programs offered by four-year col-

[49] These percentage figures are carried to the first decimal place to illustrate the full difference in the calculated numbers, rather than to imply accuracy of estimate. Furthermore, the joint distribution tables in Chapter 2 use data definitions that are almost the same as in the 1977 counselor questionnaire, but not quite. The 1,886,000 students who in Table 6 (page 51), were estimated to be recent high school graduates enrolling as first-time degree-credit students in two-year and four-year colleges in 1976, have certain special characteristics of definition. They were classified as first-time degree-credit students, and included a few who were in their mid-twenties, and who were returning to formal education after a relatively long period away; the 1977 counselors were asked to estimate only the plans for the 1977 graduating seniors, and only for the next 24 months. On the other hand, the counselors also were asked to discuss enrollment possibilities in a relatively broad group of postsecondary institutions, including for-profit business and trade schools—some of which might not be accredited to receive federal student aid funds. The joint distribution tables in Chapter 2 included only those undergraduate institutions that are eligible for federal student assistance. This was a smaller list of institutions even though the number of students thus excluded probably was not large. The two differences of definition act in opposite directions, but whether equally or not is unknown. The significance of this seems to be that a broad sampling of counselor estimates can be an effective rough check on other methods of estimate presented here, but no one should claim it is high-precision work.

Table 7. Estimated distribution of 1977 high school graduates enrolling as full-time students in different types of postsecondary institutions

Type of institution	*Estimated number of graduates enrolling within 6 months of graduation*	*Estimated number of graduates enrolling between 6 and 24 months after high school graduation*	*Total*
4-year colleges	1,063,050 (57.0%)	99,170 (31.0%)	1,162,220 (53.2%)
2-year colleges	516,605 (27.7%)	108,765 (34.0%)	625,370 (28.6%)
Public technical institutes	175,310 (9.4%)	64,620 (20.2%)	239,930 (11.0%)
Private business or trade schools	110,035 (5.9%)	47,345 (14.8%)	157,380 (7.2%)
Totals	1,865,000 (100.0%)	319,900 (100.0%)	2,184,900 (100.0%)
Enrolling students as a percent of all high school graduates:	58.3%	10.0%	68.3%
Percent of high school graduates *not* enrolling:	–	–	31.7%
Percent of total high school graduates:			100.0%

NOTE: Percents of column totals appear in parentheses. The total number of high school graduates projected for 1977 is 3,199,000 according to the National Center for Educational Statistics, Projections of Educational Statistics (1973), Table 20, page 45 (Washington, D.C.: U. S. Government Printing Office, 1973). This series of estimates is the same as that used in Appendixes B and C beginning on page 106.

Table 8. Postsecondary institutions that would best serve "additional" students

Type of institution	*Estimated number of 1977 high school graduates who would do well to continue formal full-time education*
4-year college	44,080 (13.0%)
2-year college	82,400 (24.3%)
Public technical schools or institutes	146,150 (43.1%)
Private business or trade schools	66,470 (19.6%)
Total	339,100 (100.0%)

NOTE: Percent of column total appears in parentheses. Question 4 of the March 1977 Counselor Questionnaire asked how many graduating seniors would *not* enroll full time in postsecondary education within 24 months of graduation. Question 5 then asked the counselors how many of these students would probably make a better next step if they could reconsider and instead plan further full-time education. The counselors were also asked what postsecondary institutions would best serve these particular students. This table summarizes how many such students the counselors estimated, and where they might be best served. The estimates are based on an extrapolation of the questionnaire results to the total number of high school graduates projected for 1977: 3,199,000, as projected by the National Center for Educational Statistics.

leges, then as a group four-year colleges appear to be in for an enrollment recession whether or not a larger portion of graduating high school seniors are encouraged to continue their formal education. Four-year colleges must either seek older, adult students to maintain enrollment levels, compete more successfully with their neighbors, or shrink. If four-year colleges attempt to change the emphasis of their offerings toward the interests of this potential new market, the new emphasis probably would include some combination of additional vocational subjects and increased attention to basic skills in language and mathematics.

The counselor responses in Table 8 do not reveal the importance of the factor of student finances, nor do they explain any other reason why these students are not planning to continue on to postsecondary education. Table 9, however, indicates that those high school graduates who are deterred primarily for financial reasons make up about half the total number identified in Table 8.

Table 9 suggests that the unmet educational need that the counselors perceive exists primarily in large urban school districts and in rural districts. Relatively less need is seen in the suburbs. This need also appears to be greatest within school districts that serve relatively large minority race populations, and where family incomes and school retention rates are low.

The guidance counselors were asked, "On the average, how much scholarship or grant aid do you estimate would be necessary per student per year in order to enable those students to continue their education?" The average of the responses was $1,220 in grant aid. This estimate is close to the estimate illustrated in Chapter 2 if the $1,700 in additional student aid in the example were on the average made up of $1,200 in public grants and $500 in self help, predominantly work-study funds. Neither estimate, however, is backed by careful research of the actual unmet need or of the best forms of aid to add to the present mixture.

The counselors also estimated that about 9.3 percent of the 1977 graduating high school senior class will enroll in some kind of postsecondary formal education but would be better served in the long run if they had decided to go directly to work (see Table 10). The counselors estimating this "overenrollment" were concentrated in the same kinds of high schools that reported the "underenrollment" already described. Their written comments often made it clear, however, that even though student choices produce some mismatches, these errors tend to correct themselves rather quickly and are much less wasteful than the error of forcing premature dropouts. Here is a sample of the comments.

> "I don't believe the experience of attempting college is wasted. It may just postpone entering the work force for a year or so."
>
> – from a Seattle, Washington high school

Table 9. Classification of students covered by the questionnaire who are estimated not to be continuing to postsecondary education because they lack funds, by type of high school

		Graduating Seniors, 1977		
			Estimated number who fail to continue to postsecondary education solely because they lack funds	
	Number of high schools	*Reported total*	*Number*	*Percent of reported total*
Average parental income in reporting school districts				
Up to $9,000	217	34,040	3,166	9.3
$9,000 to $15,000	760	128,953	7,081	5.5
Over $15,000	479	112,966	2,822	2.5
No response	19	3,657	82	2.2
Estimated school retention rate (K-12)				
0 –49%	35	11,052	1,491	13.5
50%–89%	640	127,670	6,754	5.3
90%–94%	258	53,886	2,081	3.9
95%–100%	372	59,358	1,741	2.9
No response	170	27,650	1,084	3.9
Percent white students in reporting school districts				
0 –49%	132	31,377	2,603	8.3
50%–89%	373	86,800	4,040	4.7
90%–100%	944	157,665	6,366	4.0
No response	26	3,774	142	3.8
Location of districts				
Urban	388	108,059	5,828	5.4
Suburban	301	91,851	2,782	3.0
Town, rural	773	78,815	5,516	5.7
No response	13	891	25	2.8

> "They should try if they have the desire—and find out for themselves what's best." —from a small-town Illinois counselor

> "A few students are barking up the wrong tree, but I think all students should have some sort of education or skill, much of which often is acquired in some sort of postsecondary school. Perhaps if we had more high school voc-ed centers I would feel differently." —from southern Michigan

> "I don't worry about 'overenrollment.' Those people immediately find out who they are and drop out." —from northern California

> "This notion that our kids are being 'overeducated' is a crock of bull. True, college isn't always the answer." —from a southern Missouri farm community

Although these comments are representative of the majority of written comments on this question, some disagreement was evident. A southern New Jersey guidance counselor estimated that perhaps a fifth of his 250 seniors were planning to continue their

Table 9 continued

		Graduating Seniors, 1977		
			Estimated number who fail to continue to postsecondary education solely because they lack funds	
	Number of high schools	*Reported total*	*Number*	*Percent of reported total*
School type				
Public	1,181	253,779	12,448	4.9
Private, independent	119	7,079	91	1.3
Catholic	116	16,079	402	2.5
Other religious	47	1,728	57	3.3
Other or no response	12	951	153	16.1
Total	1,475	279,616	13,151	4.7

NOTE: The results in this table are based on responses to questions 1, 7, 10, 11, 12, 13, and 14 of the March 1977 Counselor Questionnaire. They represent only the sample of schools that responded to the survey.

Table 10. Comparison of projected levels of "overenrolled" students for subgroups of high schools responding to the guidance counselor survey

	Number of high schools	*Total number of seniors*	*Total number of entrants*	*Total number "overenrolled"*	*Total "overenrolled" as a percent of total seniors*
Family income					
Up to $9,000	217	34,040	20,103	3,283	9.6%
$9,000 to $15,000	760	128,953	76,911	11,664	9.0
Over $15,000	479	112,966	83,840	10,831	9.6
No response	19	3,657	1,523	273	7.5
Percent who graduate					
0 –49%	35	11,052	6,653	907	8.2
50%–89%	640	127,670	77,624	13,024	10.2
90%–94%	258	53,886	37,680	4,953	9.2
95%–100%	372	59,358	43,053	5,151	8.7
No response	170	27,650	17,367	2,016	7.3
Percent White					
0–49%	132	31,377	21,085	2,971	9.5
50%–89%	373	86,800	56,697	8,936	10.3
90%–100%	944	157,665	102,782	13,799	8.8
No response	26	3,774	1,812	345	9.1
School location					
Urban	388	108,059	71,567	10,807	10.0
Suburban	301	91,851	65,408	9,068	9.9
Town, rural	773	78,815	44,756	6,132	7.8
No response	13	891	646	44	4.9
School type					
Public	1,181	253,779	161,194	23,882	9.4
Private, independent	119	7,079	6,117	388	5.5
Catholic	116	16,079	13,148	1,462	9.1
Other religious	47	1,728	1,418	216	12.5
Other or no response	12	951	500	103	10.8

Table 10 continued

	Number of high schools	*Total number of seniors*	*Total number of entrants*	*Total number "overenrolled"*	*Total "overenrolled" as a percent of total seniors*
*State subgroup**					
HIHI	452	99,953	69,841	10,775	10.8
HILO	598	114,522	70,843	9,231	8.1
LOHI	236	36,805	23,466	3,502	9.5
LOLO	186	27,456	17,586	2,502	9.1
Collapsed state subgroup†					
HI-	1,050	214,475	140,684	20,006	9.3
LO-	422	64,261	41,052	6,004	9.3
-HI	688	136,758	93,307	14,277	10.4
-LO	784	141,978	88,429	11,733	8.3
Total	1,475	279,616	182,377	26,051	9.3%

NOTE: The results contained in this table are based on responses to questions 1, 2, 3, 8, 10, 11, 12, 13, and 14 of the March 1977 Counselor Questionnaire and on a further classification of schools according to (a) their state's per-capita award expenditures and (b) percentage of the state population within commuting distance of a free-access college.

* State subgroup code definitions:

HIHI: high per-capita award expenditures and high percentage within commuting distance.

HILO: high per-capita award expenditures and low percentage within commuting distance.

LOHI: low per-capita award expenditures and high percentage within commuting distance.

LOLO: low per-capita award expenditures and low percentage within commuting distance.

† Collapsed state subgroup code definitions:

HI-: high per-capita award expenditures.

LO-: low per-capita award expenditures.

-HI: high percentage within commuting distance.

-LO: low percentage within commuting distance.

Three schools could not be classified into state subgroups and collapsed subgroups. See Appendix E for a fuller explanation of how the state subgroups were formed.

education but should not:

> "Definitely too many nonqualified people are going to college!! I would not grant money for students to attend any other than public colleges."
>
> "I think we ought to go back to a philosophy of individual initiative instead of free rides." —from upstate New York
>
> "This is not a very good survey." —from Houston, Texas

The counselors' responses to questions about unmet need were also analyzed to determine any noticeable differences that depended on whether the school was located within a state with many accessible community colleges, with a large per-capita expenditure for state scholarship programs to college students, with both, or with neither. Assuming the counselors' standards of judgment about the existence of unmet need was equally rigorous regardless of location, the results suggest that the presence of *both* high expenditure on state scholarships and easy availability of community colleges noticeably increases the proportion of students going on to postsecondary education, and reduces the counselors' estimates of unmet need. Other state strategies regarding scholarship funds or community colleges do not appear to produce differences in results as noticeable.

Table 11 describes the principal results. Briefly, Table 11 examines the experience of two types of high school graduates, depending on whether they came from schools in one of four categories. The two groups of students were the following.

1. Students described in Table 8—"seniors who do *not* plan to continue (on to postsecondary education full-time and within 24 months) and who would make a better next step if they could reconsider and instead plan further full-time education."

2. Students who were described in Table 9—high school graduates from the group above who "will not continue their education primarily because they lack the funds."

States were classified in one of four groups depending on the following characteristics.

1. Was the state in the top or bottom half of a national ranking of

Table 11. Comparison of projected underenrollment for state subgroups of high schools

State subgroup	*Percent of all 1977 graduating seniors in each region*	*Percentage of high school seniors who counselors estimate should continue full-time postsecondary education within 24 months of graduation, but will be deterred for lack of funds*
HIHI	36%	3.9%
HILO	41%	4.2%
LOHI	13%	4.9%
LOLO	10%	9.3%
Total		4.7%

NOTE: For definitions of students reported on, see text or Tables 8 and 9. The method for developing this table is described in Appendix E. See Table 12 for a listing of states assigned to each of the four regional subgroups.

states according to per-capita expenditure on need-based college student aid programs?

2. Was the state in the top or bottom half of a national ranking according to relative accessibility of its population to easy-access, low-tuition public colleges and institutes?

Table 12 shows the state groupings that result from this joint classification process.

On a scale of 1 (low priority) through 5 (top priority) the counselors rated six kinds of public programs as to the relative benefits for youth that further public expenditure might bring. Table 13 tabulates the results.

The counselors who replied to the questionnaire seemed to take it seriously. More than one-fifth of the respondents added written comments where they felt the questionnaire check-off boxes did not properly deal with their concerns. Overall, the written comments emphasize that these counselors believe that the relationship between formal education and job preparation is extremely

Table 12. State assignments to subgroups

HIHI: High per-capita award expenditures and high percentage within commuting distance of an easy-access college.

California
Colorado
Connecticut
Florida
Illinois
Kansas
Massachusetts
North Carolina
Oregon
Rhode Island
Washington
West Virginia
Wisconsin

HILO: High per-capita award expenditures and low percentage within commuting distance of an easy-access college.

Indiana
Iowa
Maine
Michigan
Minnesota
Missouri
New Jersey
New York
Ohio
Pennsylvania
Texas
Vermont

LOHI: Low per-capita award expenditures and high percentage within commuting distance of an easy-access college.

Alabama
Arkansas
Hawaii
Kentucky
Louisiana
Maryland
Mississippi
New Hampshire
South Carolina
Tennessee
Virginia
Wyoming

LOLO: Low per-capita award expenditures and low percentage within commuting distance of an easy-access college.

Alaska
Arizona
Delaware
Georgia
Idaho
Montana
Nebraska
Nevada
New Mexico
North Dakota
Oklahoma
South Dakota
Utah

NOTE: For source references, individual state rankings, and a description of how the table was constructed, see Appendix E.

Table 13. Counselor ratings of programs in which greater public expenditure might benefit young people

	Counselors' mean rating	*Rank of counselors' mean rating*
Program of additional full-time jobs for youth	3.68	4
Provide on-the-job training programs for youth in industry	4.07	1
Scholarships and loans for postsecondary education	3.74	3
Greater per-pupil expenditure within secondary and/or elementary education	3.78	2
Additional programs to attempt to reduce dropout from secondary school	3.45	5
Problem-oriented or topic-oriented programs (which are not part of the normal curriculum) such as education for parenthood, drug abuse, and so on	3.41	6

important and merits significant attention. Included among the linkages between formal education and employment that are important to these counselors are provision of more vocational and career preparation in secondary school; provision of more opportunities for internships, apprenticeships, and on-the-job training outside of school; and provision of more need-based aid for postsecondary education.

Individual counselor recommendations often differ as to specific prescription. In part, this is because local labor markets vary and the provisions already made by schools and local industry for job training are different. The following is a sample of comments that either suggested additional programs where further public expenditure might benefit young people, or elaborated on the ranking already given for the specific program ideas listed in Table 13:

> "A comprehensive high school does not offer much in the way of job training. Most students need some kind of training after high school."
> – from a suburb of Hartford, Connecticut

"We should have more cooperation between industry and education – such as a 'shadowing program' of part-time job experience."
– from northeastern Maryland

"We have an inadequate job market and fewer apprenticeship opportunities than is desirable." – from western Montana

"I would recommend special funding be considered for recent high school graduates who choose to enter the job market but who do not have adequate training. This funding would be used for special training either at a trade school or community college, assuming there is no adequate on-the-job training available. This suggestion comes from my belief that many recent high school graduates expect to go to college and then do not do so. They have no special training and yet are trying to find jobs. *They need help*." – from west Texas

"Give more emphasis to programs designed to steer capable young people into self-employment vocations."
– from a Missouri town near the Mississippi River

"Vocational exploration ought to be on a day-to-day basis in each class in high school. Vocational days or weeks just don't help much."
– from eastern Washington

"If the United States could give all its young people some work experience, such as CCC or military service between age 16 and 19, these young people and the nation would benefit. Then let youths say what they want to become – instead of branding them if they do not go to college right from high school graduation. The intellectually gifted would also gain by a work experience and could return to learning two years later."
– from a Catholic high school near Cleveland, Ohio

"There is also a need for job opportunities for the middle-income youth who does not drop out of school or become a problem. These are our solid citizens. They need opportunities, too."
– from Dayton, Ohio

"Our kids who work under a federal program after school (kids with low family incomes) do absolutely *nothing*. They are paid for doing nothing, and this teaches them a terrible lesson – that they can live off the government and get something for nothing throughout their lives." – from western North Carolina

> "Stop raising the federal minimum wage!" – from New Mexico

> "We need programs, vocational in nature, including part-time work and on-the-job training – for academically slow students. We need these programs to keep such students in a meaningful school environment. Otherwise, they will drop out too soon."
>
> – from western South Carolina

Although nowhere mentioned in the questionnaire itself, the "middle-income problem" was commented on by counselors from various types of school districts in their written remarks. The largest number of comments came from states that were in either the HIHI or HILO subgroups in Tables 11 and 12. These are states that have made relatively strong efforts, in a variety of ways, to provide basic access to some kind of postsecondary education for students who wish it. Some of these particular counselor comments reflect concern about the appropriateness of choices available to students, rather than concern about minimal access.

> "Financial aid is needed for the $12,000-to-$18,000 family if it is needed anywhere." – from northeastern Kansas

> "Our school is one where students are caught in the middle with respect to financial aid: Too much income to qualify for Basic Educational Opportunity Grants, but not enough to permit attendance at many schools without considerable parent sacrifice."
>
> – from Cincinnati, Ohio

> "More scholarships and grants should be available for middle-class students because Basic Educational Opportunity Grants do not apply to this level at all. And for your information, true middle class income is $16,000 to $26,000."
>
> – from western New Hampshire

> "We need to concentrate on jobs and financial aid for the college bound of average- and above-average-income families. They are after all the very people who will end up supporting all these public expenditure programs." – from northern Oregon

As already mentioned, it seemed wise to compare the responses of counselors with those of close observers of youth who did not work directly for secondary schools. This was done as a rough, preliminary check for possible bias on the part of counselors toward further public expenditure in the education system. In April 1977 the College Board sent between 150 and 200 questionnaires to the following four groups: directors of education programs in correctional institutions for youth; directors of education programs in YMCA's and YWCA's; Upward Bound Program directors; and employment counselors who deal primarily with youth. The results are summarized in Tables 14 and 15.

A copy of the basic questionnaire for these groups is shown in Appendix E on page 140. The only significant difference between this questionnaire and the one sent to high school counselors is that the counselors were asked about high school seniors who were expected to graduate in June 1977, whereas the four groups of nonschool youth counselors were asked about "young people (aged about 17-20) who were served by your program(s) during the last 12 months." Since these youth populations contain both high school graduates and high school nongraduates, the respondents were asked to make separate judgments about each of the two categories. The outcome of the comparison is that no bias was evident in the high school guidance counselor judgments and estimates—or if bias does exist, it is shared broadly among many other youth workers. Note, however, that the sample sizes are small and that the rates of questionnaire return range from 7 to 26 percent across the four groups surveyed. A better, although more expensive test for bias would have utilized a larger sample size.

Table 14 shows the percentage of high school graduates (in the four kinds of programs surveyed) that the respondents thought would not continue formal education, but who would make a better step if they did continue—and who do not reconsider primarily because they lack the necessary funds. The guidance counselors had estimated in the March 1977 survey that 4.7 percent of that year's high school graduates could be classified that way. One group of nonschool youth workers made estimates slightly lower than this, while three made higher estimates. All four of the nonschool counselors, in their questionnaire answers and in their written comments, echoed the high school counselors' wish to broaden formal education opportunity and to strengthen the

Table 14. Estimates by four groups of youth workers of the percentage of high school graduates in their programs who will not continue full-time postsecondary education within 24 months of graduation, who would make a better next step if they did continue formal education, and who fail to do so because they lack the money: April 1977 questionnaire

Four groups of youth workers (number of respondents in parentheses)	*Number of youth served in programs*	*Number of high school graduates in these programs*	*Percent of high school graduates in programs who fail to continue for lack of funds*
Education program directors in correctional institutions (48)	11,061	2,355	28.4%
Directors of Upward Bound programs (41)	4,369	2,489	5.3%
YMCA/YWCA workers (11)	3,655	3,193	9.2%
State employment and vocational counselors who mainly counsel youth (10)	9,384	4,187	3.6%

process of successful job placement. Here are some of their comments:

> "We strongly endorse any programs that employ or make employable. Our young people must feel there is a place for them where they can be productive and be fulfilled. Public expenditures for providing jobs *and* follow-up counseling should help cut welfare costs, court costs, prison costs, mental hospital costs, and so on."
>
> – from a YWCA program director in North Carolina

> "Our program deals with youthful offenders, aged 14 to 17, who for the most part have problems in school. For this population, full-time jobs and on-the-job training programs are top priority. Many of our residents have learning disabilities and language barriers that could have been helped considerably by individual attention at the primary school level."
>
> – from a Massachusetts forestry camp

> "Most incarcerated females will leave the institution and will have to singly support a family. A four-year college degree, thus, is not relevant for many of them. Short-term skills training in a trade that will lead to lucrative employment is most often sought by such women. We have found that most of them need "survival skills" in employability attitudes and personal goals. More orientation toward career awareness, personal budgeting, and values clarification would be helpful in the high school."
>
> – from a correctional center for women in Oregon

> "I feel that emphasis needs to be placed on programs for dropouts that provide them with both job skills and basic math and reading skills. This program should stress successful completion of GED programs. I am aware that such programs exist, but they should be expanded greatly."
>
> – from a vocational counselor in Maryland

> "Too many financial aid personnel do not adequately explain financial aid resources to students, and too often they attempt to channel low-income students into loan programs that automatically discourages these students from furthering their education. . . ."
>
> – from an Upward Bound project in Texas

> "In my opinion persons may be 'overeducated' for a particular job, but no one is ever 'overeducated' for living. Over the years the purpose of a college education has swung away from learning 'how to live' to learning 'how to earn a living.' Perhaps a more desirable purpose is a combination of the two. This country needs 'educated' plumbers as well as 'educated' professors and doctors."
>
> – from an Upward Bound program in Kentucky

These comments and others written by the high school counselors remind the analyst of any particular problem in education not to concentrate too narrowly on it. The success of programs in education does not depend solely on whether program content is intelligently designed and whether adequate financial means are available so that students from any financial background may participate if they wish. "Success" also depends on personal attitude – on self-confidence and willingness to take a reasonable range of chances. It depends on the economy and what the labor market may demand over time, even if this cannot be predicted accurately at any single moment. It depends on a reasonably healthy social fabric that gives personal support when needed and

Table 15. Percentage distribution of respondents dealing with youth through programs in corrections, YMCAs or YWCAs, employment counseling, and Upward Bound, spring 1977

"Programs in which greater public expenditure might benefit young people"	*Corrections education program directors*	*Upward Bound directors*	*YMCA/ YWCA workers*	*Employment counselors*
Program of additional full-time jobs for youth	86 (93)	61 (88)	69 (77)	72 (78)
Provide on-the-job training programs for youth in industry	92 (96)	80 (85)	77 (83)	92 (92)
Scholarships and loans for postsecondary education	48 (17)	85 (36)	69 (25)	57 (21)
Greater per-pupil expenditure within secondary and/or elementary education	52 (45)	86 (68)	38 (50)	30 (54)
Additional programs to attempt to reduce dropout from secondary school	74 (83)	87 (85)	77 (92)	50 (57)
Problem-oriented or topic-oriented special programs (which are not part of the normal academic curriculum) such as education for parenthood, drug abuse, etc.	72 (79)	66 (78)	69 (92)	50 (71)

NOTE: Reported percentage is proportion saying that further public expenditure for high school graduates in their programs would be "top priority" or "highly important" among five possible judgments of decreasing enthusiasm concerning each of six possible programs. Comparable percentages in parentheses concern judgments about public spending for non-high school graduates in the same programs.

SOURCE: April 1977 questionnaire to four groups of youth workers. See Appendix E for full tabulation of results.

is perceived to be adequately fair. This study does not attempt to examine all these factors but acknowledges their great importance. The following chapter will deal with a few of these elements.

4: THE CONTEXT

When work on this study began two years ago, the job appeared to be a relatively uncomplicated one of estimating aggregate demand for postsecondary education and determining how the demand might change during the next few years, assuming no significant shifts in public expenditure policies. Part of the task also was to assess how much worthwhile but unsatisfied demand for postsecondary education now exists. At what family income levels does it occur? At what levels of scholastic ability? The first results were reported in Chapter 2 and appear to be straightforward, although necessarily approximate. The new 1977 questionnaire results, reported in Chapter 3, appear to confirm the earlier estimates.

But where does this result lead us? In what contexts should it be examined? Many contexts are involved. The issue is one of legislation and administration; of economic choice; of designing public expenditure policy for a probable set of outcomes, but also for uncertainty; of social and historical perspective; and of fairness. A discussion of these issues follows.

Legislative Questions

The initial purpose of this study appeared to be to design legislative proposals. The research pointed to a significant number of people who would benefit by further formal education but who fail to do so solely because they lack the money. Money for this in the past has been authorized for spending by state and federal legislatures. The study did not seek any fundamental change in the way government extends educational opportunity. Having decided how many additional students should be provided for, the remaining tasks, apparently, were to estimate the form of student financial aid that would most directly encourage new enrollment in an economical way, and then to estimate the program costs and suggest what mixture of federal and state responsibility might be appropriate.

However, none of these estimates are easily made. What would be the appropriate form of additional student aid? The most effective form of student financial aid to encourage enrollment is direct grants and scholarships—not loans or work-study payments—but grants and scholarships are also the most expensive forms of aid, because neither the original sum of money nor a work product is returned to the grantor.

What level of government should authorize the needed funds? The federal government collects about two-thirds of the total taxes levied in the United States and in inflationary times presides over a more nearly self-adjusting tax base than do state or local governments.[50] Further, an important advantage of federal scholarships and grants is that they can be made portable from one state to another in ways that are not now permitted within most state scholarship and grant programs. Finally, federal expenditure can be made equitably among the states. (An even per-capita expenditure is not likely to occur spontaneously under the initiative of the individual states, assuming that this or something like it is desirable.) On the other hand, the ultimate responsibility for postsecondary education rests more nearly with the states than with the federal government. Assuming the policy implications of this study receive serious attention, is it wise to recommend that financial support for postsecondary education come increasingly from a level of government that does not, at least now, have final responsibility? The most promising legislative recommendations at first appeared to be that additional grant funds should be made available and that these funds be appropriated under existing federal programs. Any uneasiness caused by the simplicity of this solution was soothed by the knowledge that the present array of federal and state programs that emerged during the past 15 years took its present form through a series of patchwork decisions rather than in a single act of fine-tuned central planning. Furthermore, a system that depends on financing from many sources may be untidy, but it retains an important strength: No one person or governmental body can fully destroy the system even if they wanted to.[51] If the study estimated correctly but conservatively the unmet aggregate educational needs, it seemed at first as if any steps that started to meet those needs could only help, whether or not the details of the original plan proposed here were "right."

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[50] Carnegie Foundation for the Advancement of Teaching, *The Federal Role in Postsecondary Education*. San Francisco: Jossey-Bass, Inc., Publishers, 1975, p. 13.

Administrative Questions

I sounded out informally those tentative first conclusions and recommendations. I talked with federal officials, directors of state scholarship and grant programs, officials in education associations, and with financial aid officers in two-year and four-year public and private colleges. The results of those talks were spotty. The majority of the people I spoke to agreed with the initial, tentative conclusion. Others, however, believed an increase in spending for postsecondary student aid should occur only if preceded by better definition and administration in many of the major existing programs.

The California Student Aid Commission, for example, commented in December 1976 about the underlying need for a review of how student aid responsibilities are assigned and how they are administered.

> There has been rapid, massive, and uncoordinated growth in the number, kind, and value of student aid programs provided by federal, state, institutional, and private donors. Between 1964 and 1974, the amounts of money available for the direct support of undergradu-

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[51] David Riesman, "The Future of Higher Education in a Time of Retrenchment," *Higher Education*, Vol. 4, 1975, p. 477.

> ate students has increased by more than 1,000 percent. The number of major federal programs has grown from one to six, with four different delivery agents responsible for distributing their funds to students. The number of state funded programs has grown from one to seven, with five administered by the Student Aid Commission and two by the individual segments.
>
> There have been two major consequences of this growth. First, and most important, there has been a major and significant expansion of the support available to financially needy students seeking postsecondary education. The goals of access, choice, and retention have come much closer to being realized, particularly by the State of California. Regardless of any other outcomes, this expansion of student support can only be considered a major achievement.
>
> The second consequence of growth, however, is not as positive. The uncontrolled and uncoordinated expansion of the purposes, sources, types and selection processes of aid has produced massive confusion in the minds of students, parents, school counselors, policy makers, and if the truth were known, in the minds of the program administrators themselves. That confusion has grown to the point where it is beginning to have a negative effect on the continued realization of the goals of equality of access, choice, and retention. Because of the complicated processes, a large number of needy students are failing to apply for and receive sufficient financial support. Public funds, both for program and for program administration, are not being used in the most effective and economical ways. Public confidence that aid is being directed toward those who need it could be eroded unless better procedures for delivering aid are adopted.[52]

Among the persons I consulted, all felt some comprehensive review of present federal and state student aid programs would be timely, if such a review could be carried out competently and without becoming hopelessly enmeshed in the politics of representation. Many of the most troublesome questions are those where the solutions might favor or hinder one sector compared with another· two-year vs. four-year colleges, public vs. private, states that spend heavily for postsecondary student aid vs. those

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52. California Student Aid Commission, *Master Plan for the Administration and Coordination of Publicly Funded Student Aid in California. Final Report, Phase II.* Sacramento, California, December 1976, p. 1.

that do not, and so on. Several of the questions, however, are mainly administrative ones, such as to what degree students and their families are supplying accurate financial information on which relative financial need is based, whether students understand their repayment obligations when they take out loans, whether loan collection is adequately pursued, or whether the present system of allocating student aid funds from Washington to the states and from states to postsecondary institutions is either fair or fully understood.

Some observers felt that increased appropriation levels for student aid should be achieved quickly, even though there are acknowledged flaws in the delivery system. They reasoned that flaws in the system have always existed and that in such a large and diverse enterprise it is unrealistic to expect all flaws to disappear. Meanwhile, every year spent studying the question is a year in which another large student cohort does not receive the assistance it needs – an expensive lost opportunity.

The observers who say that thorough review should precede any major increase in appropriations believe that the basic principles on which our student aid system is built are so important that we should not risk a public loss of confidence in the system by trying to make it run at full capacity before it is tuned up to do so. These principles in the past have included insistence on aiding students mainly on the basis of demonstrated individual need, and requiring both a reasonable family contribution and also student self help from loans or work before awarding grant aid. These principles have also usually included avoiding public expenditure in excess of the amounts actually needed, and meeting only demonstrated student need rather than making major fixed-sum student aid payments to the teaching institutions. Many observers believe that those principles, and public confidence in them, are so important that the first task today should be to try to deal with administrative concerns like those voiced by the California Student Aid Commission.

This book brings forward little new direct evidence to suggest whether thoroughgoing review should precede or merely accompany new levels of student aid if they are authorized. The administrative problems are important, however, and will probably become more serious if they are not attacked in a more comprehensive way than has seemed possible recently. This judgment led me to add at the end of Chapter 2 a summary of the specific issues that appear in greatest need of early attention, including the following:

1. Simplification of federal student loan programs.
2. Appraisal of the extent to which student self-help (jobs and loans) should be required in different kinds of institutions as a precondition to receiving public grants or scholarships.
3. Appraisal of the balance in the flow of students and student aid funds to public and private postsecondary institutions.
4. Appraisal as to whether the current methods of determining how much families ought to contribute to the postsecondary education of their sons and daughters are methods that are adequately documented and sufficiently open to peer review and public scrutiny.

The following two related legislative questions were identified in the preceding section of this chapter and should probably be included in the review process suggested here.

1. If major new student aid were authorized, what forms should it take? Grants only? A mixture of grants and work-study expansion? Loans? Or what?
2. To what extent should such additional appropriations be state ones and to what extent federal appropriations? Could federal matching incentives be used appropriately in a way to help reduce the wide disparity in state efforts?

Economic Choice

During 1977 I sampled opinion within the Congressional Budget Office, among Senate and House staff concerned with education legislation, and among a few college and university economists who regularly consult the federal government on public expenditure policy. Since two billion dollars worth of additional postsecondary student aid appears to be a worthwhile federal expenditure in its own right, I asked them what kind of federal budget issue this raised. What are the other major competitors for new funds? Is the need for funds for competing purposes so overwhelming that additional student aid funds cannot receive serious consideration? Although individual answers differed, the following is a fair summary of the views expressed:

(1) The issue of further progress toward equal access to postsecondary education continues to be an important one among these analysts. No one thought it unimportant. All appeared to think it merited serious attention and discussion. (2) None of those consulted were particularly optimistic, however, that equal access to postsecondary education would be a successful competitor for major new funds in the immediate future. (3) The strongest competitors for attention in new public expenditure programs were reform of the financing of health care, welfare reform, readjustment in uses and sources of energy, and creation of new jobs. Meanwhile, attempts to control inflation appear to require particularly stringent selectivity among programs seeking funds.

How can one distinguish the probable costs and benefits among these competing areas of need? A first approach probably should set aside for the time being the matter of a special need for stringent selectivity in spending programs on account of inflation. The question of selectivity seems valid but not special. Can anyone remember a time when free spending in government made sense? If, on occasion, the nation was tempted to think so, it encountered the penalties later. The question of how much can be afforded will inevitably arise, but in this instance it should arise at the end and not at the beginning of the discussion. Also, compared with the other major proposals noted above for new program expenditures, two billion dollars is not one of the large ones.

A second step should be to treat jobs and job training as companions to the problem of postsecondary student aid rather than as competitors. Both efforts may require (and, therefore, compete for) public funds, but both attempt to accomplish some of the same goals and in ways that complement each other. Both attempt to improve the start of young adults in life, both attempt to offer more opportunity to citizens who lack it, and many of their advantages and disadvantages are complementary.

As noted in Chapter 3, high school guidance counselors and all of the other groups of youth observers who were questioned except for Upward Bound program directors believed that a direct governmental approach to creation of jobs and on-the-job training for youth should take at least some priority compared with providing additional scholarships and grants for postsecondary training.[53] Youth manpower programs and on-the-job training programs are able to assist young men and women who are either ineligible or poor prospects for further formal education to gain employability. The unemployment rate for high school dropouts often runs about twice as high as for high school graduates and about four times as high as for college graduates.[54] Merely attracting more students to formal postsecondary education will not cure all the employment and training problems of young adults.

Undue emphasis on manpower and training programs for young adults may also be a mistake. In one of the more expensive of the current U.S. manpower training programs, the U.S. Job Corps, the cost per enrollee per year is almost twice as great as the cost of attendance for a year at the most expensive Ivy League college.[55] Youth manpower programs and job training programs are difficult to design and administer for large numbers of persons. It is also difficult to design programs of substantial size that do not require a full-employment economy to accept the graduates of the programs without disturbing working conditions for the already employed. As in education, techniques for evaluating how much difference the manpower programs make and how long the differences last are difficult to design. Finally, it is reasonable to assume that the manpower training programs that may be emphasized by the federal government during the next few years have not yet been completely designed or installed.

Our system of postsecondary formal education, although chang-

53. See Tables 13 and 15.

54. John T. Grasso, "On the Declining Labor Market Value of Schooling," paper prepared for the 1977 annual meeting of the American Educational Research Association, New York, April 1977, Figure 4. (Mimeographed.)

55. "Jobs for Youths," editorial in *Boston Globe*, March 12, 1977, p. 6.

ing in some ways, is largely in place and working. We know how to operate a wide array of programs. We know how to stimulate additional enrollment at relatively low additional public cost. This limited, sliding-scale subsidy thus requires the student and his or her family to make a significant contribution. By providing public money directly for student aid, furthermore, this system also encourages the different provider institutions to be inventive and to offer study programs that meet current student needs. Perfection surely is not achieved, but improvement is consistently encouraged through this market-like mechanism. For our system of formal education to assist a large number of now-unserved youth requires at minimum the decision to spend the necessary student aid funds and the willingness to permit the whole student aid system to be tuned up to operate at a level closer to full capacity.

A companion goal of improving opportunity in education and employment for young adults appears to make sense, but how or when additional employment-related programs should be considered is not a part of this study. It does appear that these two concerns could be designed to work in parallel. For some high school graduates, formal postsecondary education can improve employability. To the extent that more young adults attempt to improve their start in life through formal education rather than either immediate job seeking or trying to enroll in a federal job program, this would ease some of the pressure of numbers on employment-related government programs and on the labor market.

Finally, other national issues that surely stand in direct competition with providing more student aid for postsecondary education include energy, health care reform, and welfare reform. Any attempt at casting up a precise comparison of anticipated costs and benefits appears both unrealistic and beyond the scope of this study, but some observations can be made. These issues will probably command more public attention than does postsecondary education and probably should. They deal more directly with life and death questions; they are newer issues; they are far more expensive to resolve; their experts appear to disagree more frequently and with greater force. Also, they require fundamental redesigning, rather than the tuning and moderate increase in spending proposed here. If this particular study seems cautious with respect to the desirability of studying before spending, its approach to health, welfare, or energy would have been doubly cautious. In those areas the nation is much less sure of what works and what does not than in postsecondary education. How should a legislator balance the desirability of spending large amounts in vital areas where the outcomes are unclear, against the desirability of spending relatively smaller sums on a less controversial but known and worthwhile purpose? The legislators and government administrators faced with this problem might prefer to recast the question so the issue of choice is not as sharp, and so spending patterns for new funds remain diversified until workable paths become clearer within the highest priority issues. Meanwhile, on its own merits, the provision of significant new funds for postsecondary student aid would meet a clear need. It would receive bipartisan popular approval if the past is guide, and it would build on proven strength in our system of education.

Returns on Investment in Postsecondary Education

When I asked legislators and government analysts and academic advisors to government about what sort of public expenditure problems our tentative recommendations might raise, they most often mentioned the variety of other competing, expensive, unfinished public business just described. However, the matter of return on investment in postsecondary education was also frequently mentioned, usually discreetly.

Early in our conversations the question would quietly be asked: "What about the return on investment in education—in college education? Hasn't that been declining recently?" The question acknowledges the fact that many respected academic economists believe the stream of dollar benefits accruing as a result of a constant-sized investment in college education in a given year is smaller in the 1970s than in the 1960s or 1950s. The widely published work of Richard B. Freeman and others was noted briefly in Chapter 1. Their further conclusion should be pretty clear: Public expenditure to expand postsecondary enrollment is an increasingly dubious proposition. So also is increased private, individual expenditure for the same purpose. The conversation rarely rested long on these points, but often long enough to set the tone for what followed. Those who argue for further investment to increase the rate of access to postsecondary education are expected to do so from a mildly defensive position.

Under this so-called human capital theory, two different sets of costs and benefits are used to calculate the return on investment in college or other postsecondary education, one to determine the social rate of return, the other to determine the individual or private rate of return. The social rate of return is usually used to explain or advocate public policy. The costs that are figured in a social-return calculation take into consideration welfare foregone to society as a result of spending on postsecondary education rather than on something else. These costs include student net expenses of attending, such as net tuition, books, and transportation. They also include student foregone earnings—earnings students would have received if they had worked full-time instead of attending school. The social costs also include the extra public subsidies to institutions to meet operating and capital expenses. The calculated benefits gained by society as a result of its investment in education are measured as the extra earnings, before income tax, of college graduates compared with comparable earnings of high school graduates. Freeman calculated that the social return on college education was about 13 percent in 1968 and that it fell by about 2 to 4 percentage points during the next five years, depending on the method of calculation applied.[56]

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[56] Lee See Hu, and Stromsdorfer, *A Cost-Effectiveness Study of Vocational Education*. University Park, Pa.: Institute for Research on Human Resources, Pennsylvania State University. March 1969. Table 1. (Mimeographed.) *Also* David R. Witmer. "Is the Value of College Going Really Declining?". *Change*. December 1976, p. 47. *Also* Richard B. Freeman, "The Decline in the Economic Rewards to College Education," *The Review of Economics and Statistics*. February 1977, Vol. 59, No. 1, pp. 18-29.

The private rate of return is calculated from the viewpoint of individuals. Costs are those that college students and their parents pay; benefits are the after-tax earnings of college graduates over those of high school graduates. Private rates of return are calculated principally to illustrate changing incentives for students themselves. Freeman calculated a decline in the private return similar to the decline in social return during the same five-year period.[57]

These calculations provide an interesting view of possible changing relationships in the costs of education and in salaries paid in various labor markets. But the methods of calculating do not seem reliable enough to bear the weight of determining public or private expenditure policy for the future. In order to discover that the private return on college education in 1973 is lower than in 1968, for example, the future stream of income—for both high school graduates and college graduates—had to be estimated first, on the basis of what new graduates were receiving in those years, and second, on some assumption as to whether their future earnings would or would not follow the patterns of growth of preceding generations. This earnings growth was usually estimated from the wage profile for a particular year—in which the wages of 45-year-olds is typically larger than for 35-year-olds, and those in turn are larger than for 25-year-olds of whatever definition. During long periods when the demand for particular skills roughly equals the supply, these wage profiles may have considerable stability, but if our economy begins to increase the value it places on certain blue-collar skills for which postsecondary education is not required, the return on investment calculation is affected. This has happened. It does not necessarily mean our society needs more plumbers or that college education is less useful.

Furthermore, the recent behavior of the labor market is not what it should be if this theory represented a reliable explanation of reality. For example, the calculations of declining individual return on investment in college education during the early 1970s should, in an orderly world, have discouraged new enrollment in colleges. However, one large new group of college students easily identified by U.S. Census figures during that period is black college students. Between 1970 and 1974 black enrollment in U.S. colleges increased from 522,000 to 814,000. In 1969 black college graduates aged 25 to 29 earned 83 percent as much as comparable whites. By 1973, black college graduates aged 25 to 29 earned 9 percent more than their white counterparts.[58] These black graduates are apparently earning a handsome return on their investment in postsecondary education. According to the theory they should not have.

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[57] Richard B. Freeman, "The Decline in the Economic Rewards to College Education."

One could speculate that the unexpected benefits to black students occurred because this special group was particularly capable at learning employment-related skills. Or perhaps recent affirmative action policies in government and industry affected the outcome. Or some other external explanation might be devised. Nonetheless, advisers of black high school students in the late 1960s, equipped only with broad census data and a belief in human capital theory, might have given extremely bad advice to individual black students and to legislators concerned with how much to spend on postsecondary student aid designed to increase access to higher education.

Challenges to human capital theory appear to be arising more frequently in recent years within the economics profession itself. Lester C. Thurow, Professor of Economics and Management at Massachusetts Institute of Technology, developed a theory of job competition that suggests employers are likely to hire the best educated persons who are available at the prevailing rates of pay. Less educated job applicants are left unemployed longer or must take lower-paying jobs. If Thurow's theory is true, the difference in salary rates between college graduates and high school graduates should increase at times when relatively large numbers of college graduates are available. This is the opposite of the result predicted under the earlier human capital theory. Meanwhile, John T. Grasso, an educational psychologist at the University of West Virginia, and David R. Witmer, an economist at the University of Wisconsin–LaCrosse, have challenged Freeman's earlier work and claim that different and legitimate data, if it had been used by him, would have yielded much smaller calculated declines in return on investment in education during the late 1960s and early 1970s.[59]

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[58] Richard B. Freeman, *Black Elite: The New Market for Higher Educated Black Americans* (report prepared for the Carnegie Commission on Higher Education). New York: McGraw-Hill Book Company, 1976, Tables 16, 22.

One of the least charitable appraisals of the value of using human capital theory to form public policy was offered at the Fourth World Congress of the International Industrial Relations Association in Geneva, Switzerland, in September 1976 by its president, John T. Dunlop. Dunlop is a former chairman of the Harvard Department of Economics and is also former Secretary of Labor.

> "The idea of investing in human capital is very old; Adam Smith emphasized the 'skill, dexterity and judgment with which labor is generally applied.' In the past fifteen years enormous research resources have been poured into developing this simple idea and measuring the rates of return on training and education. . . .
>
> "My considered judgment is that virtually all of this enormous outpouring is irrelevant to private and public policy-making and to the allocations of public and private funds for training and education. . . ."[60]

Dealing With Uncertainty

Five or ten years from now, looking back, it may seem foolish to have attempted to state explicitly which parts of this study seem most reliable and which least so. On the other hand, any prescription for further public expenditure probably ought to have such warnings on its label. If the author cannot estimate these things, how can legislators, government officials, or voters?

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[59] Witmer, "Is the Value of College Going Really Declining?"; Grasso, "On the Declining Labor Market Value of Schooling."

[60] John T. Dunlop, "Industrial Relations, Labor Economics, and Policy Decisions." Presidential address read at the Fourth World Congress of the International Industrial Relations Association, September 6, 1976, pages 9-10. (Mimeographed.)

Of all the assertions made here, the most reliable one appears to be that worthwhile additional demand does in fact exist for postsecondary education in the United States, both in the rising market for adult education, and in the "traditional" market of recent high school graduates on which this study concentrates. Within the traditional market, unmet educational need appears to have been, if anything, stated conservatively. Although our system of postsecondary education has its flaws and rigidities, a balanced view would show it to be a resilient, effective system. Furthermore, it seems appropriate now to attempt to increase the proportion of recent high school graduates who are provided the financial means to undertake postsecondary education if they wish to and are willing also to spend their own time, effort, and money.

However, without a comprehensive review and tune-up of our postsecondary student aid system, it is extremely difficult to recommend which program packages best meet the identified need. The design of specific program additions should depend partly on a public sense of how responsibility for the costs of postsecondary education should be distributed. To what extent should students and parents contribute? What should be the state's responsibility and what should be federal? How can we balance the conflicting desirability for solutions that are equitable across the whole United States and that permit student mobility with the need to recognize historic regional differences, and the wisdom of placing as much responsibility for control as close as possible to where the action occurs? As the volume of student aid funds increases, in what ways if any should those administering student aid also try to manage overall growth and shrinkage in the various sectors of education? For example, should it be a matter of any concern that the recent changes in federal student aid policy probably act to stimulate growth of two-year more than four-year institutions? The most favorable time to discuss these questions is right now, before the pressures of enrollment shrinkage begin to set sector against sector and institution against institution.

Social and Historical Perspective

The United States since World War II has been trying to define with fairness and with a strong voice what equal access to opportunity really means in employment and in education. Full employment has been a stated goal in public law for more than a quarter of a century, although its precise definition and how it may be achieved without unwanted side effects have not been resolved. At the levels of education above high school but below graduate and professional school, a working definition of equal access to postsecondary education may be as follows: sufficient public support so that any qualified student may have available a reasonable choice of specific opportunities regardless of his or her starting financial circumstances. This definition became generally applicable to accredited two- and four-year public and nonprofit private degree-granting colleges and institutes during the mid-1960s. During the years of the World War II GI Bill of Rights, and again during the 1970s, a federally coordinated accreditation process has made some student aid programs available in some proprietary trade and business schools, including some correspondence schools.

At other levels of education, equal access may mean extra, compensatory effort, but the extent to which public policy will encourage or prohibit this is not clear. As this is written, the U.S. Supreme Court has not decided the case of *Regents of the University of California vs. Bakke*, nor have the probable test cases following that one been brought forward.

The position of the present federal administration on this issue is clearer. Wade H. McCree, Jr., Solicitor General of the United States, speaking extemporaneously on October 12, 1977, explained the government's position in the Bakke case to the Supreme Court.

> "The Congress and the Executive Branch have adopted many minority-sensitive programs that take race or minority status into account in order to achieve the goal of equal opportunity. The United States has also concluded that voluntary programs to increase the participation of minorities in activities throughout our society, activities previously closed to them, should be encouraged and sup-

> ported.
>
> "Accordingly it asks this court to reject the holding of the Supreme Court of California that race or other minority status may not constitutionally be employed in affirmative action and special admissions programs, properly designed and tailored to eliminate discrimination against racial and ethnic minorities as such discrimination exists today, or to help overcome the effects of past years of discrimination . . . .
>
> "Indeed, many children born in 1954, when *Brown (Brown vs. Board of Education)* was decided, are today, 23 years later, the very persons knocking on the doors of professional schools, seeking admission about the country. They are persons who, in many instances, have been denied the fulfillment of the promise of that decision because of resistance to this court's decision that was such a landmark when it was handed down . . . .
>
> "I would like to conclude that this is not the kind of case that should be decided just by extrapolation from other precedents; that we are here asking the court to give us the full dimensions of the 14th Amendment (to the U.S. Constitution) that was intended to afford equal protection.
>
> "And we suggest that the 14th Amendment should not only require equality of treatment, but should also permit persons who were held back to be brought up to the starting line, where the opportunity for equality will be meaningful."[61]

Whatever the outcome of the *Bakke* case, there seems to be in American society a continuing sense that it is important to try to be fair, and a sense of respect for education as a means of providing opportunity in life regardless of one's parents' work and income. Finally, through many changes of presidential administration and popular mood since World War II there appears to have been a growing willingness to pay the public costs of extending postsecondary educational opportunity as long as it is not patently wasteful.[62] The issues raised in this book are ones that run deep in our history. Their resolution during the next few years will help determine how well our training institutions and our economy can adapt to sharp demographic change, and at the same time act with fairness toward new generations of young adults. The issues merit our most thoughtful attention, without delay.

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[61] *Washington Post*, 13 October 1977, p. A8. Article XIV of the U.S. Constitution, an amendment ratified in 1868, says in part: "No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws."

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62. A June 1975 survey released by Gallup International shows the top public priorities for federal spending to be "health care, public school education, and law enforcement," as reported in the *San Francisco Chronicle*, 5 February 1976, p. 11.

A Louis Harris poll taken in March 1976 indicates that higher education ranks second only to medicine in the public confidence in leadership of societal institutions. This was reported in the *San Francisco Sunday Examiner and Chronicle*, 28 March 1976, p. A-3.

These notes were reported in Carnegie Council for the Advancement of Teaching, *The States and Higher Education: A Proud Past and a Vital Future*. San Francisco: Jossey-Bass, Inc., Publishers, 1976, p. 5.

APPENDIXES

Appendix A: How to Use the Tables in Appendixes B and C

The purpose of Appendix A is to help practitioners use the tables in Appendix B (the joint distribution tables) and Appendix C (the cumulative distribution tables) to help answer common questions that may arise in their work. Sample questions follow, along with descriptions of processes one can follow in seeking the answers in the tables.

What Information Do the Joint Distribution Tables Display in Appendix B?

Appendix B shows how all U.S. high school graduates in each of seven selected years may be jointly described by measured verbal aptitude and by the income of their families.

Take an example for 1976 from Table B-5 in Appendix B. This table shows the number of high school graduates able to score between 400 and 449 on the verbal sections of the Scholastic Aptitude Test (SAT), and who also come from families between the 40th and 60th percentile levels of U.S. family incomes (of families containing a 17-year-old). This estimated number is 93,000. If all U.S. high school seniors were to take the SAT, the College Entrance Examination Board estimates that 60 percent would score below 400 on the verbal section and 26 percent (100 minus 74) would score above 449. These percentile benchmarks are shown at the top of the tables, just below the verbal score designations.

The lowest-income families represented among these 93,000 graduates are estimated to come from families with an annual income of $14,100. The College Scholarship Service (CSS) estimates that a three-child, two-parent family in normal circumstances (including a statistical average of 1.45 children in college), would be expected to be able to contribute $590 toward a son's or daughter's college expenses at this family-income level. The CSS estimate is made using its 1975-76 processing standards, taking into consideration normal assessments against family income and assets. The most prosperous families represented among these 93,000 high school graduates receive an annual income of $19,100, and on the average would be expected to be able to contribute $1,460 toward college expenses of a son or daughter. The family income and parental contribution benchmarks are shown at the left-hand edge of each table.

The estimated total of all high school graduates able to score between 400 and 449 on the SAT-verbal sections is 445,000. All the cells in the table add up to 3,175,000, the total estimated number of U.S. high school graduates in 1976.

What Information Do the Cumulative Distribution Tables Display in Appendix C?

Appendix C is built from the data in Appendix B and merely recasts the same information in a different format. Each cell shows an estimate of the number of high school graduates who fit the marginal labels plus all those who have higher measured verbal aptitude and family incomes. Take the above example for 1976. Turn to Table C-5 in Appendix C. What is the estimated number of U.S. high school graduates able to score 400 or better on the SAT-verbal sections *and who also* come from families above the 40th percentile income level (families receiving $14,100 a year and able to contribute $590 toward college expenses)?

Enter the table at the 400 SAT-verbal score column and the 40th percentile family-income row. The table estimates that 935,000 high school graduates are able to score 400 or better and come from families with incomes at the 40th percentile level or higher.

A college, seeking an abler student body, wishes to consider raising the effective minimum verbal aptitude of its entering freshmen during the next two years. How much smaller is the defined national candidate pool if 450 is set as the effective minimum SAT*-verbal score tar-*

get for 1978, compared with 400 in 1976?

Here, the phrase "effective minimum" is used in the original question. This is because the individual minimum test score in any entering class probably will vary considerably from year to year, whereas the 10th percentile of entering freshman scores (90 percent of freshmen score this well or better) may be a more stable and a more practical definition of the minimum score level of interest.

Table C-5 (1976) shows 1,271,000 high school graduates able to score 400 or better on the SAT-verbal sections (all income levels); Table C-6 (1978) shows 829,000 graduates able to score 450 or better. If the college's suggested policy were attempted, and if all other factors were equal, the potential applicant pool for this college would have shrunk under the new definition by 442,000 (1,271,000 minus 829,000) high school graduates or by 35 percent.

In the same example, what if we wished only to consider shrinkage in the segment of the market at the 60th percentile level of family incomes or higher? Table C-5 (1976) shows 688,000 high school graduates at 400 or higher score level and 60th percentile family income or higher; Table C-6 (1978) shows 486,000 graduates at 450 or higher score level and 60th percentile family income or higher. The shrinkage calculation then becomes 688,000 minus 486,000 or 202,000, a decrease of 29 percent. Note that family income at the 60th percentile level increased $2,800 in two years or 7 percent per year in these projections, and that CSS estimates the ability of these families to contribute to college expenses increased from $1,460 to $1,720 in two years or a net increase of $580.

To the extent CSS correctly estimates family ability to contribute at increasingly high levels of nominal family income, the implication here would be that the total individual student expense budget at this college could increase $260 during the two-year period and still have only a neutral effect on recruitment from students at the 60th percentile level of family income. However, this implies that although these families' incomes rise 7 percent, their ability to contribute rises 8.5 percent per year. (If ability to contribute were to rise only 7 percent per year, that dollar increase would be $210 over two years.) Depending on the nature of the problem, some extra caution probably is appropriate when projecting family ability to contribute, at high family income levels, particularly when attempting to work several years ahead or back from 1976. Because of this uncertainty, the 1964 and 1984 tables do not provide estimates for expected parental contribution.

Assume that in a particular private college, a family income of $25,500 – and implied ability to contribute to college costs of $2,870 – represents in 1976 approximately the border between families who require further financial aid and those who do not. Assume also that the college intends that the effective minimum SAT*-verbal score of the entering freshman class equal or exceed 450.*

First, what is the national pool of high school graduates who would not require financial aid, as defined by these conditions? Second, how much smaller would that pool have been if tuition of 1976 had been set $300 higher?

First, in Table C-5, Appendix C, enter the table for SAT-verbal score 450 and family income $25,500. The pool thus defined is 287,000 high school graduates.

Second, by subtraction, of the 287,000 high school graduates described this way, 163,000 fall above the next higher cutoff level for family income, and 124,000 therefore remain within the income bracket between the 80th and 90th percentile levels of family income (and all scoring 450 or higher on the SAT-verbal sections). The next question becomes, how many of that 124,000 become "excluded" by a $300 tuition increase? Here, for rough estimating purposes, linear interpolation is the easiest way to proceed. If the 124,000 graduates range in expected family contribution from $2,870 to $5,200, what proportion of the group is cut off by a $300 slice? Five thousand two hundred dollars minus $2,870 equals $2,330. Three hundred dollars divided by $2,330 equals 13 percent. Thirteen percent of 124,000 equals 16,000 high school graduates thus subtracted. Sixteen thousand divided by the total 287,000 students originally defined represents a reduction in the effective pool of 6 percent, assuming the tuition had been $300 higher and all other elements held consistent.

How does one use the tables if the desired entry points do not happen to be the ones listed at the margins?

Again, linear interpolation seems appropriate. If desired, this process also can fill in table values for years between 1964 and 1984 which are not included in these appendixes. Linear interpolation, however, probably produces the least accurate results at the high or low extremities of measured aptitude or income.

What if we are only interested in single-sex data?

A workable rough estimate can be achieved by dividing by two any of the estimates presented here.

What if a metropolitan area, a state, or a multistate regional table would be more helpful than a national one? How would such tables be constructed?

The first element needed is the estimated number of high school graduates in the defined region. For example, the Minnesota Higher Education Coordinating Commission estimated there would be 72,000 Minnesota high school graduates in 1976. Minnesota would thus produce 72,000/3,175,000 (from Table C-5) or 2.27 percent of the 1976 U.S. high school graduates. If Minnesota students have the same SAT-verbal score distribution and family income distribution as do all U.S. high school graduates, every cell in Table B-5 and C-5 can be multiplied by 0.0227 to produce a Minnesota set of estimates for 1976. In many states for many purposes, the errors introduced by making this assumption of comparability will not be significant.

If a more precise estimate is desired, the College Entrance Examination Board Student Search Service data each year collects SAT-verbal score distributions by state, and distributions of student-reported family income estimates. This data is available on request, and could indicate the amount of adjustment for particular regions that should be made to improve the quality of the desired estimates. The American College Testing Service also produces national distributions of ACT test scores and of student-reported family income for ACT test takers each year, and provides this information to colleges using ACT services. These ACT-client colleges also receive reports of test and income distributions for the state in which they are located, if they are within one of the 37 states with highest usage of ACT. There is no published equating scale, however, to translate ACT score levels to or from a SAT scale.

What are Other Uses for These Appendix Tables?

Table 3 in the text of this study illustrates additional purposes for these tables if information about measured verbal aptitude and family income of college-enrolled students is also available. On a national scale, one can then begin to estimate how many high school graduates are *not* now in college but who might productively enroll if funds were available.

If similar state tables are constructed and the same information about the college-enrolled students were made available, an estimate of how much potential but unmet demand exists in individual states can begin to be made. The costs of meeting this demand will depend in part upon the assumptions made about how expensive a college choice these students should be encouraged to consider, and upon the observed unfilled capacity within the various colleges in the state. Other significant matters that must be considered in such a study are the extent to which demonstrated unmet financial need exists among already-enrolled students, and given this information, what the appropriate balance might be between grants and loans in any proposed addition to public financial aid.

Finally, if reliable data is available in a state as to college-enrolled student's verbal aptitude and income, and as to student charges and financial aid available at those colleges, it is also possible to examine how the financial incentives to attend public and private colleges might shift for students under various possible changes in tuition and financial aid policies. This analysis would not predict accurately what would happen in the short run if any of those policies were adopted. But it would illustrate the general magnitude of money incentives facing different groups of enrolled students, and of the possible benefits and losses to each. It might also help analyze possible voter response. This kind of analysis has not been accomplished in many of the states where the proposal has been made that tuition charges be raised at state colleges and universities and that the extra income be used for need-based financial aid. Lack of analysis is by no means the only obstacle that such proposals have faced, but it nonetheless may be an important one.

Appendix B: Joint Distribution Tables of U.S. High School Graduates: Aptitude and Family Income (1964-1984, Selected Years)

Table B-1. 1964 Joint Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-verbal score		*200-249*	*250-299*	*300-349*	*350-399*	*400-449*	*450-499*	*500-549*	*550-599*	*600-649*	*650-800*
SAT percentile (Cutoff level for lowest score)		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0- 20	$ 000 (Not est.)	119,000	92,000	84,000	64,000	47,000	26,000	14,000	8,000	3,000	500
20- 40	$ 3,700 (Not est.)	84,000	76,000	80,000	72,000	62,000	38,000	23,000	14,000	7,000	1,500
40- 60	$ 6,260 (Not est.)	64,000	65,000	78,000	73,000	66,000	46,000	31,000	20,000	11,000	3,000
60- 80	$ 8,780 (Not est.)	48,000	53,000	71,000	71,000	72,000	54,000	39,000	28,000	17,000	5,000
80- 90	$13,700 (Not est.)	17,000	21,000	31,000	34,000	37,000	31,000	24,000	19,000	12,000	4,000
90-100	$17,100 (Not est.)	11,000	14,000	22,000	29,000	37,000	34,000	29,000	26,000	19,000	9,000
Totals		343,000	321,000	366,000	343,000	321,000	229,000	160,000	115,000	69,000	23,000

NOTE: Each cell in the table estimates the number of high school graduates that are described at the margins by SAT score and income classifications. For example, the table estimates that approximately 47,000 high school graduates score between 400 and 449 on the SAT-verbal sections and come from families at the bottom 20 percent of the U.S. family incomes

Total number of high school graduates:
2,290,000

Table B-2. 1970 Joint Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-verbal score		200-249	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-649	650-800
SAT percentile (Cutoff level for lowest score)		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0- 20	$ 000 ($ 000)	151,000	116,000	107,000	82,000	59,000	33,000	18,000	9,000	4,000	1,000
20- 40	$ 5,830 ($ 80)	107,000	96,000	102,000	91,000	77,000	48,000	29,000	18,000	9,000	2,000
40- 60	$ 9,460 ($ 300)	81,000	82,000	98,000	92,000	85,000	59,000	39,000	26,000	14,000	3,000
60- 80	$12,860 ($ 800)	60,000	67,000	89,000	90,000	91,000	69,000	50,000	36,000	21,000	6,000
80- 90	$17,170 ($ 1,580)	22,000	26,000	39,000	43,000	47,000	39,000	30,000	23,000	15,000	5,000
90-100	$24,200 ($ 3,430)	13,000	18,000	28,000	37,000	46,000	42,000	37,000	33,000	24,000	12,000
Totals		434,000	405,000	463,000	435,000	405,000	290,000	203,000	145,000	87,000	29,000

NOTE: Each cell in the table estimates the number of high school graduates that are described at the margins by SAT score and income classifications. For example, the table estimates that approximately 59,000 high school graduates score between 400 and 449 on the SAT-verbal sections and come from families at the bottom 20 percent of the U.S. family incomes.

Total number of high school graduates:
2,896,000

Table B-3. 1972 Joint Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-verbal score		200-249	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-649	650-800
SAT percentile (Cutoff level for lowest score)		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0- 20	$ 000 ($ 000)	157,000	121,000	111,000	85,000	61,000	34,000	19,000	10,000	4,000	1,000
20- 40	$ 6,570 ($ 90)	111,000	101,000	106,000	95,000	80,000	50,000	30,000	19,000	9,000	2,000
40- 60	$10,670 ($ 390)	85,000	85,000	102,000	96,000	89,000	61,000	41,000	27,000	14,000	3,000
60- 80	$14,500 ($ 1,010)	63,000	69,000	93,000	94,000	95,000	72,000	52,000	37,000	22,000	6,000
80- 90	$19,350 ($ 2,000)	22,000	28,000	41,000	44,000	49,000	40,000	31,000	24,000	16,000	6,000
90-100	$27,300 ($ 3,920)	14,000	19,000	29,000	38,000	48,000	44,000	39,000	34,000	25,000	12,000
Totals		452,000	423,000	482,000	452,000	422,000	301,000	212,000	151,000	90,000	30,000

NOTE: Each cell in the table estimates the number of high school graduates that are described at the margins by SAT score and income classifications. For example, the table estimates that approximately 61,000 high school graduates score between 400 and 449 on the SAT-verbal sections and come from families at the bottom 20 percent of the U.S. family incomes.

Total number of high school graduates: 3,015,000

Table B-4. 1974 Joint Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-verbal score		200-249	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-649	650-800
SAT percentile (Cutoff level for lowest score)		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0- 20	$ 000 ($ 000)	163,000	125,000	116,000	88,000	64,000	35,000	19,000	10,000	4,000	1,000
20- 40	$ 7,580 ($ 100)	115,000	104,000	110,000	99,000	82,000	52,000	32,000	19,000	10,000	2,000
40- 60	$12,300 ($ 490)	88,000	88,000	106,000	100,000	92,000	64,000	42,000	28,000	15,000	3,000
60- 80	$16,720 ($ 1,220)	65,000	72,000	97,000	97,000	99,000	74,000	53,000	39,000	23,000	7,000
80- 90	$22,300 ($ 2,400)	23,000	29,000	42,000	46,000	51,000	42,000	33,000	26,000	16,000	6,000
90-100	$31,500 ($ 4,600)	15,000	20,000	30,000	40,000	50,000	46,000	40,000	35,000	26,000	12,000
Totals		469,000	438,000	501,000	470,000	438,000	313,000	219,000	157,000	94,000	31,000

NOTE: Each cell in the table estimates the number of high school graduates that are described at the margins by SAT score and income classifications. For example, the table estimates that approximately 64,000 high school graduates score between 400 and 449 on the SAT-verbal sections and come from families at the bottom 20 percent of the U.S. family incomes.

Total number of high school graduates:
3,130,000

Table B-5. 1976 Projected Joint Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-verbal score		200-249	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-649	650-800
SAT percentile (Cutoff level for lowest score)		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0- 20	$ 000 ($ 000)	165,000	127,000	117,000	89,000	65,000	36,000	19,000	11,000	4,000	1,000
20- 40	$ 8,680 ($ 120)	117,000	106,000	112,000	100,000	84,000	53,000	32,000	19,000	10,000	2,000
40- 60	$14,100 ($ 590)	89,000	89,000	108,000	101,000	93,000	64,000	43,000	28,000	15,000	4,000
60- 80	$19,100 ($ 1,460)	66,000	73,000	98,000	99,000	100,000	75,000	54,000	39,000	23,000	7,000
80- 90	$25,500 ($ 2,870)	24,000	29,000	43,000	47,000	52,000	42,000	33,000	26,000	17,000	6,000
90-100	$36,100 ($ 5,200)	15,000	20,000	30,000	40,000	51,000	47,000	41,000	36,000	26,000	13,000
Totals		476,000	444,000	508,000	476,000	445,000	317,000	222,000	159,000	95,000	33,000

NOTE: Each cell in the table estimates the number of high school graduates that are described at the margins by SAT score and income classifications. For example, the table estimates that approximately 65,000 high school graduates score between 400 and 449 on the SAT-verbal sections and come from families at the bottom 20 percent of the U.S. family incomes.

Total number of high school graduates: 3,175,000

Table B-6. 1978 Projected Joint Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-verbal score		200-249	250-299	300-349	350-349	400-449	450-499	500-549	550-599	600-649	650-800
SAT percentile (Cutoff level for lowest score)		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0- 20	$ 000 ($ 000)	166,000	127,000	118,000	90,000	65,000	36,000	20,000	10,000	4,000	1,000
20- 40	$ 9,940 ($ 140)	117,000	106,000	112,000	100,000	84,000	53,000	32,000	20,000	10,000	2,000
40- 60	$16,100 ($ 690)	89,000	90,000	108,000	101,000	93,000	64,000	43,000	28,000	16,000	4,000
60- 80	$21,900 ($ 1,720)	66,000	73,000	98,000	99,000	101,000	76,000	54,000	39,000	23,000	7,000
80- 90	$29,200 ($ 3,370)	24,000	29,000	43,000	47,000	52,000	42,000	33,000	26,000	17,000	6,000
90-100	$41,300 ($ 6,000)	15,000	20,000	30,000	40,000	51,000	47,000	41,000	36,000	26,000	13,000
Totals		477,000	445,000	509,000	477,000	446,000	318,000	223,000	159,000	96,000	33,000

NOTE: Each cell in the table estimates the number of high school graduates that are described at the margins by SAT score and income classifications. For example, the table estimates that approximately 65,000 high school graduates score between 400 and 449 on the SAT-verbal sections and come from families at the bottom 20 percent of the U.S. family incomes.

Total number of high school graduates: 3,183,000

Table B-7. 1984 Projected Joint Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-verbal score		200-249	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-649	650-800
SAT percentile (Cutoff level for lowest score)		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0- 20	$ 000 (Not est.)	141,000	108,000	100,000	76,000	55,000	31,000	17,000	9,000	4,000	1,000
20- 40	$14,900 (Not est.)	100,000	91,000	95,000	85,000	72,000	45,000	28,000	17,000	8,000	2,000
40- 60	$24,200 (Not est.)	76,000	77,000	92,000	86,000	80,000	55,000	36,000	24,000	13,000	3,000
60- 80	$32,900 (Not est.)	57,000	62,000	84,000	85,000	86,000	64,000	46,000	33,000	20,000	6,000
80- 90	$43,900 (Not est.)	20,000	25,000	37,000	40,000	44,000	36,000	28,000	22,000	14,000	5,000
90-100	$62,000 (Not est.)	13,000	17,000	26,000	35,000	43,000	40,000	35,000	31,000	22,000	10,000
Totals		407,000	380,000	434,000	407,000	380,000	271,000	190,000	136,000	81,000	27,000

NOTE: Each cell in the table estimates the number of high school graduates that are described at the margins by SAT score and income classifications. For example, the table estimates that approximately 55,000 high school graduates score between 400 and 449 on the SAT-verbal sections and come from families at the bottom 20 percent of the U.S. family incomes.

Total number of high school graduates: 2,713,000

Appendix C: Cumulative Distribution Tables of U.S. High School Graduates: Aptitude and Family Income (1964-1984, Selected Years)

Table C-1. 1964 Cumulative Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-verbal score		200	250	300	350	400	450	500	550	600	650
SAT percentile		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0	$ 000 (Not est.)	2,290,000	1,947,000	1,626,000	1,260,000	917,000	596,000	367,000	207,000	92,000	23,000
20	$ 3,700 (Not est.)	1,832,500	1,608,500	1,379,500	1,097,500	818,500	544,500	341,500	195,500	88,500	22,500
40	$ 6,260 (Not est.)	1,375,000	1,235,000	1,082,000	880,000	673,000	461,000	296,000	173,000	80,000	21,000
60	$ 8,780 (Not est.)	918,000	842,000	754,000	630,000	496,000	350,000	231,000	139,000	66,000	18,000
80	$13,700 (Not est.)	460,000	432,000	397,000	344,000	281,000	207,000	142,000	89,000	44,000	13,000
90	$17,100 (Not est.)	230,000	219,000	205,000	183,000	154,000	117,000	83,000	54,000	28,000	9,000

NOTE: Each cell in the table estimates the number of high school graduates whose SAT scores are *at or higher than* the designated scores at the margin, *and* whose family income is *at or higher than* the designated income level. For example, the table estimates that approximately 350,000 high school graduates in this year have SAT-verbal scores at or higher than 450 *and* family incomes at or higher than the 60th percentile level.

Total number of high school graduates:
2,290,000

Table C-2. 1970 Cumulative Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-verbal score		*200*	*250*	*300*	*350*	*400*	*450*	*500*	*550*	*600*	*650*
SAT percentile		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0	$ 000 ($ 000)	2,896,000	2,462,000	2,057,000	1,594,000	1,159,000	754,000	464,000	261,000	116,000	29,000
20	$ 5,830 ($ 80)	2,316,000	2,033,000	1,744,000	1,388,000	1,035,000	689,000	432,000	247,000	111,000	28,000
40	$ 9,460 ($ 300)	1,737,000	1,561,000	1,368,000	1,114,000	852,000	583,000	374,000	218,000	100,000	26,000
60	$12,860 ($ 800)	1,158,000	1,063,000	952,000	796,000	626,000	442,000	292,000	175,000	83,000	23,000
80	$17,170 ($ 1,580)	579,000	544,000	500,000	433,000	353,000	260,000	179,000	112,000	56,000	17,000
90	$24,200 ($ 3,430)	290,000	277,000	259,000	231,000	194,000	148,000	106,000	69,000	36,000	12,000

NOTE: Each cell in the table estimates the number of high school graduates whose SAT scores are *at or higher than* the designated scores at the margin, *and* whose family income is *at or higher than* the designated income level. For example, the table estimates that approximately 442,000 high school graduates in this year have SAT-verbal scores at or higher than 450 *and* family incomes at or higher than the 60th percentile level.

Total number of high school graduates: 2,896,000

Table C-3. 1972 Cumulative Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-verbal score		200	250	300	350	400	450	500	550	600	650
SAT percentile		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0	$ 000 ($ 000)	3,015,000	2,563,000	2,140,000	1,658,000	1,206,000	784,000	483,000	271,000	120,000	30,000
20	$ 6,570 ($ 90)	2,412,000	2,117,000	1,815,000	1,444,000	1,077,000	716,000	449,000	256,000	115,000	29,000
40	$10,670 ($ 390)	1,809,000	1,625,000	1,424,000	1,159,000	887,000	606,000	389,000	226,000	104,000	27,000
60	$14,500 ($ 1,010)	1,206,000	1,107,000	991,000	828,000	652,000	460,000	304,000	182,000	87,000	24,000
80	$19,350 ($ 2,000)	603,000	567,000	520,000	450,000	368,000	271,000	187,000	117,000	59,000	18,000
90	$27,300 ($ 3,920)	302,000	288,000	269,000	240,000	202,000	154,000	110,000	71,000	37,000	12,000

NOTE: Each cell in the table estimates the number of high school graduates whose SAT scores are *at or higher than* the designated scores at the margin, *and* whose family income is *at or higher than* the designated income level. For example, the table estimates that approximately 460,000 high school graduates in this year have SAT-verbal scores at or higher than 450 *and* family incomes at or higher than the 60th percentile level.

Total number of high school graduates:
3,015,000

Table C-4. 1974 Cumulative Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-*verbal score*		200	250	300	350	400	450	500	550	600	650
SAT percentile		0	15	29	45	60	74	84	91	96	99
Family income *Percentile*	*Amount (Est. parent contribution)*										
0	$ 000 ($ 000)	3,130,000	2,661,000	2,223,000	1,722,000	1,252,000	814,000	501,000	282,000	125,000	31,000
20	$ 7,580 ($ 100)	2,505,000	2,199,000	1,886,000	1,501,000	1,119,000	745,000	467,000	267,000	120,000	30,000
40	$12,300 ($ 490)	1,880,000	1,689,000	1,480,000	1,205,000	922,000	630,000	404,000	236,000	108,000	28,000
60	$16,720 ($ 1,220)	1,254,000	1,151,000	1,030,000	861,000	678,000	478,000	316,000	190,000	90,000	25,000
80	$22,300 ($ 2,400)	628,000	590,000	541,000	469,000	383,000	282,000	194,000	121,000	60,000	18,000
90	$31,500 ($ 4,600)	314,000	299,000	279,000	249,000	209,000	159,000	113,000	73,000	38,000	12,000

NOTE: Each cell in the table estimates the number of high school graduates whose SAT scores are *at or higher than* the designated scores at the margin, *and* whose family income is *at or higher than* the designated income level. For example, the table estimates that approximately 478,000 high school graduates in this year have SAT-verbal scores at or higher than 450 *and* family incomes at or higher than the 60th percentile level.

Total number of high school graduates:
3,130,000

Table C-5. 1976 Projected Cumulative Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-*verbal score*		*200*	*250*	*300*	*350*	*400*	*450*	*500*	*550*	*600*	*650*
SAT percentile		0	15	29	45	60	74	84	91	96	99
Family income *Percentile*	*Amount (Est. parent contribution)*										
0	$ 000 ($ 000)	3,175,000	2,699,000	2,255,000	1,747,000	1,271,000	826,000	509,000	287,000	128,000	33,000
20	$ 8,680 ($ 120)	2,541,000	2,230,000	1,913,000	1,522,000	1,135,000	755,000	474,000	271,000	123,000	32,000
40	$14,100 ($ 590)	1,906,000	1,712,000	1,501,000	1,222,000	935,000	639,000	411,000	240,000	111,000	30,000
60	$19,100 ($ 1,460)	1,272,000	1,167,000	1,045,000	874,000	688,000	485,000	321,000	193,000	92,000	26,000
80	$25,500 ($ 2,870)	638,000	599,000	550,000	477,000	390,000	287,000	198,000	124,000	62,000	19,000
90	$36,100 ($ 5,200)	319,000	304,000	284,000	254,000	214,000	163,000	116,000	75,000	39,000	13,000

NOTE: Each cell in the table estimates the number of high school graduates whose SAT scores are *at or higher than* the designated scores at the margin, *and* whose family income is *at or higher than* the designated income level. For example, the table estimates that approximately 485,000 high school graduates in this year have SAT-verbal scores at or higher than 450 *and* family incomes at or higher than the 60th percentile level.

Total number of high school graduates: 3,175,000

Table C-6. 1978 Projected Cumulative Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-*verbal score*		200	250	300	350	400	450	500	550	600	650
SAT percentile		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0	$ 000 ($ 000)	3,183,000	2,706,000	2,261,000	1,752,000	1,275,000	829,000	511,000	288,000	129,000	33,000
20	$ 9,940 ($ 140)	2,546,000	2,235,000	1,917,000	1,526,000	1,139,000	758,000	476,000	273,000	124,000	32,000
40	$16,100 ($ 690)	1,910,000	1,716,000	1,504,000	1,225,000	938,000	641,000	412,000	241,000	112,000	30,000
60	$21,900 ($ 1,720)	1,274,000	1,169,000	1,047,000	876,000	690,000	486,000	321,000	193,000	92,000	26,000
80	$29,200 ($ 3,370)	638,000	599,000	550,000	477,000	390,000	287,000	198,000	124,000	62,000	19,000
90	$41,300 ($ 6,000)	319,000	304,000	284,000	254,000	214,000	163,000	116,000	75,000	39,000	13,000

NOTE: Each cell in the table estimates the number of high school graduates whose SAT scores are *at or higher than* the designated scores at the margin, *and* whose family income is *at or higher than* the designated income level. For example, the table estimates that approximately 486,000 high school graduates in this year have SAT-verbal scores at or higher than 450 *and* family incomes at or higher than the 60th percentile level.

Total number of high school graduates: 3,183,000

Table C-7. 1984 Projected Cumulative Distribution of U.S. High School Graduates: Aptitude and Family Income

SAT-*verbal score*		*200*	*250*	*300*	*350*	*400*	*450*	*500*	*550*	*600*	*650*
SAT percentile		0	15	29	45	60	74	84	91	96	99
Family income											
Percentile	*Amount (Est. parent contribution)*										
0	$ 000 (Not est.)	2,713,000	2,306,000	1,926,000	1,492,000	1,085,000	705,000	434,000	244,000	108,000	27,000
20	$14,900 (Not est.)	2,171,000	1,905,000	1,633,000	1,299,000	968,000	643,000	403,000	230,000	103,000	26,000
40	$24,200 (Not est.)	1,628,000	1,462,000	1,281,000	1,042,000	796,000	543,000	348,000	203,000	93,000	24,000
60	$32,900 (Not est.)	1,086,000	996,000	892,000	745,000	585,000	412,000	272,000	163,000	77,000	21,000
80	$43,900 (Not est.)	543,000	510,000	468,000	405,000	330,000	243,000	167,000	104,000	51,000	15,000
90	$62,000 (Not est.)	272,000	259,000	242,000	216,000	181,000	138,000	98,000	63,000	32,000	10,000

NOTE: Each cell in the table estimates the number of high school graduates whose SAT scores are *at or higher than* the designated scores at the margin, *and* whose family income is *at or higher than* the designated income level. For example, the table estimates that approximately 412,000 high school graduates in this year have SAT-verbal scores at or higher than 450 *and* family incomes at or higher than the 60th percentile level.

Total number of high school graduates:
2,713,000

Appendix D: Notes on the Derivation of the Joint and Cumulative Distribution Tables

Major Elements: The Relationship of Income and Aptitude

The development of tables estimating numbers of high school graduates classified by income and verbal ability required two major steps:

1. Creating a table for 1974 high school graduates of the probabilities of jointly encountering SAT-verbal scores within 10 specified ranges (200-249, 250-299, and so on by 50-point intervals, except for a final interval of 650-800) and having a percentile standing on pretax family income within six given percentile ranges (0-20, 20-40, 40-60, 60-80, 80-90, 90-100).
2. Calculating cell frequencies for the years 1964, 1970, 1972, 1974, 1976, 1978, and 1984 by multiplying each of the joint probabilities determined in step 1 by the estimated or projected total number of high school graduates for the given year.

These tasks were designed and executed by Rex Jackson, Program Director, Educational Testing Service, Princeton, New Jersey. With the exception of the projection of nominal levels of family income and expected parental contributions for Appendixes B and C, the methodology described in these notes is Jackson's.

Estimation of Joint Probabilities

Information from two major sources was used to develop the basic table of joint probabilities. The first major source was the 1974

Preliminary Scholastic Aptitude Test/National Merit Scholarship Qualifying Test (PSAT/NMSQT) Norms Study, conducted by Educational Testing Service for the College Entrance Examination Board. As part of this study, nearly 18,000 high school juniors in a nationally representative sample of high schools were tested with the PSAT/NMSQT in the fall of 1974. (The PSAT/NMSQT is a short version of the SAT that yields scores on a scale directly comparable to the SAT 200-800 score scale). The distribution of SAT-verbal scores that would be obtained by all high school seniors was then estimated by adjusting the score results of the PSAT/NMSQT for juniors to take into account differences between junior and senior scores observed in a prior study. Checks on the sample, and comparison of sample data with information on the national population of high school students from other sources, indicated that the sample is closely representative of the national population. The estimates developed by this study of the verbal ability of high school juniors and seniors (as measured by the SAT) are believed to be the most current and accurate data available at this time.

A significant disadvantage of the PSAT/NMSQT norming sample was the absence of information on parental income for students in the sample. However, if the relationship of pretax family income to SAT-verbal scores could be determined, the estimated joint probability table could be constructed by taking the proportion of students at each score level (as determined by the 1974 Norms Study) and distributing that proportion across the family income percentile categories in accordance with the postulated relationship.

The second major information source was the National Longitudinal Study (NLS) of the high school graduating class of 1972. The NLS study was sponsored by the U.S. Department of Health, Education, and Welfare, National Center for Educational Statistics; the base-year study was administered by Educational Testing Service. This source helped establish the relationship between aptitude and family income. The NLS Base Year Study of the class of 1972 included the following elements: a student questionnaire containing a question about parents' family income; and a test battery, including a vocabulary test and a reading measure. The questionnaire and tests were administered to a national probability sample of 1972 high school seniors. Other information about students in the sample was collected from the students' schools, including SAT-verbal scores in about a third of the individual cases.

The first step in using the NLS data for the purpose at hand was to compute a verbal score (consisting of vocabulary plus reading) from the NLS test. Then an equating study was performed and the SAT-verbal score equivalent of each NLS verbal score was determined (by the equipercentile method) using data for those students who had taken both SAT and the NLS tests. The correlation between the SAT-verbal scores reported by the schools and the NLS verbal scores (which were based on two quite brief tests) was found to be 0.84. The conversion of NLS test scores to SAT-verbal equivalent levels appeared to be a reasonable process for aggregate analysis. As a result of the equating, SAT-verbal scores or equivalents were available for 17,061 students in the NLS sample (5,708 students with school-reported SAT-verbal scores and 11,353 additional students with NLS verbal scores converted to SAT-verbal scores). Of these, 13,174 students also responded to the survey question concerning parental income.

The actual response categories for the NLS family-income question were: less than $3,000; $3,000-$5,999; $6,000-$7,499; $7,500-$8,999; $9,000-$10,499; $10,500-$11,999; $12,000-$13,499; $13,500-$14,999; $15,000-$18,000; over $18,000. Since information was needed on the relationship of SAT-verbal scores to relative percentile standing on parental pretax income (among high school graduates), the midpercentile rank of each income category was determined for the full sample and each response to the income question was then converted to the standard score (z) corresponding to the category's percentile rank in a normal distribution. It was believed that these normalized standard deviates would be more nearly linearly related to the test scores than the original responses or their percentile ranks. The correlation between these income values and the test scores was found to be 0.3466. Since both the NLS sample and the PSAT/NMSQT norming sample were designed to be representative of national populations of high school students and since the abilities of students in each sample appeared to be about equally diverse, this correlation was taken without correction as a reasonable estimate of the correlation between verbal test scores and normalized relative standing on income for 1974 high school seniors.

The normalized standing (z score) on income for a given population by definition has a mean of zero and standard deviation of one. The mean of the estimated distribution of SAT-verbal scores for 1974 high school seniors was 371.77 and the standard deviation 115.74. Thus the regression of z (income) on SAT-verbal score was taken as $z = 0.3466\,[(\text{SAT} - 371.77)/115.74]$ or $z = 0.00299(\text{SAT}) - 1.1133$, with a standard error of estimate of $\sqrt{1 - (0.3466)^2} = 0.9380$. The conditional distribution of z score for income given an SAT-verbal score was then taken to be a normal distribution with mean of $0.00299\,(\text{SAT}) - 1.1133$ and standard deviation of 0.9380. Since the income percentile classifications of interest were 0-20, 20-40, 40-60, 60-80, 80-90, and 90-100, for each SAT-verbal score the density of the conditional distribution of income within each of these intervals (e.g., area above $z = 1.28$ for the interval 90-100th percentile) was determined and multiplied by the SAT-verbal score marginal density to estimate the joint probability. These joint probabilities were then aggregated to form the final table described earlier.

Development of the Joint Frequency Tables

A basic decision made prior to forming the estimates and projections was that the table of joint probabilities developed for 1974 high school seniors portrays sufficiently stable relationships so that they hold basically true for other annual classes as well. Since income is expressed as relative standing among high school graduates, the marginal percentile distribution of this variable is by definition constant across the years. However, whether the estimated distribution of SAT-verbal scores and the estimated relationship of these scores to percentile standing on income are likely to be relatively constant is open to question.

With regard to scores, although there has been much recent discussion of declining test scores (in particular SAT-verbal scores), there does not appear to be conclusive evidence that the verbal abilities of *all* high school seniors nationally are declining. In addition, there do not appear to be strong grounds for projecting such a decline into the future. Since convincing evidence on either side of the question is lacking, it seemed appropriate to develop the projections assuming no basic change in the distribution of verbal aptitude. This accomplished, changes in the overall number of high school graduates *under this condition* can be assessed. Those with other beliefs about probable changes in the verbal aptitude of high school graduates may view the tables as either unduly optimistic or pessimistic depending on their points of view, and may make whatever interpretation seems appropriate to them.

As to the relationship between scores and income, the correlation of about 0.35 used in this study is consistent with the findings of numerous studies during the past 20 years of the relationship of academic ability to socioeconomic status, which have most frequently found correlations in the range 0.35 to 0.40. These studies lend support both to use of the correlation observed for the NLS sample in forming the basic table of probabilities and to the assumption that the relationship underlying this table may remain relatively stable over the next 10 years.

Once it is assumed that the basic joint probability table can reasonably apply also to the 1964-1984 period, tables of joint frequencies are developed for each year simply by multiplying the estimated total number of high school graduates for 1974 by each of the cell probabilities.

The calculated number of high school graduates in each cell was rounded to the nearest thousand students, helping to signal the approximate nature of this work. It also seems reasonable to estimate that the calculated cell values may be in error by as much as 10 to 15 percent at the middle percentile levels of income and aptitude, and perhaps by as much as 50 percent at the extreme percentile levels. Whatever the sampling errors and errors of estimate, however, the general relationships displayed and their stability over time do not appear to be in serious question.

Having constructed a series of joint distribution tables, it was possible to recombine the calculated cell values and to produce a corresponding series of *cumulative* distribution tables. In these cumulative tables, the number in each cell represents the number of students who fit the marginal description of family income and measured verbal aptitude *plus* all those with higher family income *and* with higher measured verbal aptitude. In several of the practical applications of this work, a cumulative table is quicker and more convenient to use.

Other Information Sources

The total number of U.S. high school graduates for the years 1964-72 is the series reported by the National Center for Educational Statistics. The estimates for 1974, 1976, and 1978 are from *Projections of Educational Statistics (1973)*, National Center for Educational Statistics, Table 20. Estimates for 1984 are from *Demographics: 1975-1990*, Education and Economic Systems, Inc., Boulder, Colorado, November 1975, page 22.

Nominal values of pretax family income corresponding to designated percentile levels of family income were calculated from the following sources in the following manner. The basic time series for the distribution of family income in the United States (1960-74) comes from *Money Income and Poverty Status of Families and Persons in the United States: 1974*, U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 99 (U.S. Government Printing Office, Washington, D.C., 1974), Table 2. However, this series does not separately estimate the family incomes of greatest interest: income of families of high school graduates. Also, earlier work in 1963 by Jeannette M. Fitzwilliams in the Office of Business Economics, U.S. Department of Commerce, points out that the basic census series for family income does not account for certain nonmoney income items such as wages in kind, the value of food and fuel produced and consumed on farms, and certain items of imputed rent and interest. These additional items do not appear to change substantially the nominal income values for the lower and middle percentile cutoff points of the census family income series, but they do imply approximately a 10 percent increase in nominal family income at the 90th percentile level.

In order to adjust the basic census series upward to attempt to reflect family income levels for the families of high school graduates, computer analysis was made of the 1960 and 1970 sample surveys of the U.S. Census Bureau, yielding a distribution of family incomes for families containing at least one 17-year-old son or daughter. Reported values at the 90th percentile level were adjusted upward by 10 percent to take account of the additional imputed income items noted above.

That method produced the family income distribution which appears in the 1970 joint and cumulative tables in this study. Corresponding family income distributions for 1964, 1972, and 1974 were derived by adjusting the 1970 distribution by the percentage differences between those years and 1970 that occurred in median family income in the basic census time series.

Family income from 1974 through 1984 was projected to increase by 7 percent per year. This assumption, or any other specific one, is highly debatable since it depends upon the relatively unpredictable near-term performance of the nation's economy. Median family income did increase an average 7 percent per year during the last five years for which data are readily available (1968-73). If one estimates that productivity in the labor force will increase about 2 percent per year and that the Consumer Price Index (CPI) will increase about 5 percent per year, family income should increase approximately 7 percent. The same result could be anticipated with 1 percent per year productivity increase and 6 percent per year change in CPI. During the 1960s the average increase in productivity was greater and the inflation rate significantly lower than in the projection estimates above. Therefore, depending on one's predictions about the economy, one now could reasonably estimate a lower rate of increase than 7 percent in family income or a higher one. If these tables have any careful use five or ten years from now, that use probably should be preceded by checking the income figures estimated here against later actual figures, and by readjusting the dollar values of family income that represent the correct labels for each designated percentile level of income.

Finally, estimates of expected parental contribution for college expenses for 1970 through 1978 were provided by James E. Nelson, Vice President for Program Planning and Research of the College Entrance Examination Board. Parental contribution amounts were calculated for each year, based on a random sample of more than 10,000 Parents' Confidential Statements from parents of students applying for financial aid during the 1974-75 year. The CSS uniform methodology of need analysis was used in a computerized modeling system to estimate expectations for each year, accounting for actual and assumed income growth and inflation. Only positive or zero amounts of expected contribution were considered, and 1975-76 rates of income tax and FICA withholding tax were used as constants for all years for the purpose of comparison. The results represent average expected contributions by income level and the random sample from which the average was derived included all kinds of family financial circumstances: varying family size and numbers of children in college; single and combined parent incomes; a range of actual family assets and net worth; and, actual calculations of taxes, allowances, and unusual expenses.

Since the standards of assessment applied by CSS have changed a number of times, sometimes significantly, during the past 10 years, two questions of subjective judgment required decisions before preparing this final element in the joint and cumulative distribution tables. First, is it preferable to be historically accurate, showing the actual and varying standards of expected parental contribution in the past years displayed, or is it preferable to show what the expected parental contributions would have been in the past if common (current) standard CSS expectations had prevailed since 1964? Since most of the uses anticipated for the joint distribution tables are to assist work on current problems, the common-standards presentation seemed preferable. Second, if a common standards approach then is used in the joint distribution tables, is it so accurate as to merit extending – even for illustrative purposes – back to 1964 and ahead to 1984? A conservative decision was made on this question, and the full ten-year extension was not made. Anyone wishing to make that extension may graph the three years of distribution reported in the table shown here and derive amounts of expected parental contribution in the 1964 and 1984 joint distribution tables.

	Average expected parental contributions from income and assets		
Income intervals	*1974*	*1976*	*1978*
Below $4,000	$ 0	$ 0	$ 0
$4,000-5,999	35	20	20
$6,000-7,999	95	90	60
$8,000-9,999	130	105	70
$10,000-11,999	360	280	225
$12,000-13,999	555	455	295
$14,000-15,999	865	710	575
$16,000-17,999	1,160	1,030	790
$18,000-19,999	1,655	1,445	1,190
$20,000-21,999	1,960	1,755	1,520
$22,000-23,999	2,835	2,485	1,960
$24,000-25,999	2,840	2,725	2,270
$26,000-27,999	3,610	3,315	2,890
$28,000-29,999	3,725	3,560	3,190
$30,000 and above	6,370	5,950	5,485

Appendix E: Notes on the Spring 1977 Surveys

The March 1977 Counselor Questionnaire was distributed to a representative sample of 2,689 secondary school guidance directors in public and nonpublic schools throughout the United States. A follow-up mailing was sent to nonrespondents approximately six weeks after the initial mailing. Usable returns were received from 1,475 counselors or 55% of the original sample group. The population sampled in this effort consisted of all U.S. high schools on the master file of high schools maintained by Educational Testing Service.

A copy of the questionnaire used in this survey is reproduced on pages 136–139.

Analyses of the data collected by means of this survey are given in Chapter 3. Although the sampling unit was the school, for these analyses the schools are effectively weighted according to size. The estimates of percentages of students going on to postsecondary education or failing to continue education because they lack the funds were formed by aggregating the numbers reported by the counselors in response to the relevant questions (2, 3, 4, and 7a) and dividing these by the total number of seniors reported in response to question 1. In some tables in Chapter 3, these percentages have been used in conjunction with a NCES estimate of 3,199,000 high school seniors in 1977 in order to project the counselor estimates to the entire high school class.

Judgments of priorities for additional public spending were analyzed by computing mean ratings. Responses to questions 10 through 14 were used to classify schools by average family income, retention, minority enrollment, location, and type for the crosstabulations reported in Chapter 3. For some crosstabulations, schools were classified according to whether their state ranked high or low in (a) per-capita scholarship award expenditures, and (b) percentage of population within commuting distance of a "free-access" college. The number of schools in each of these categories is as follows.

		Percent of students within commuting distance	
		HIGH	LOW
State's per-capita award expenditures	HIGH	HIHI N-452	HILO N-598
	LOW	LOHI N-236	LOLO N-186

The state-by-state assignments to subgroups are indicated in Table E-1. High and low were defined relative to the median values for all 50 states.

Table E-1. States ranked on the basis of per-capita award expenditures and percent of students within commuting distance of a free-access college

	High-To-Low Rank*		
State	State's per-capita award expenditures	Percent of students within commuting distance	Subgroup assignment†
Alabama	‡	8	3
Alaska	‡	37	4
Arizona	‡	32	4
Arkansas	34	21	3
California	12	5	1
Colorado	7	23	1
Connecticut	17	1	1
Delaware	32	35	4
Florida	24	4	1
Georgia	33	39.5	4
Hawaii	35	16.5	3

	*High-To-Low Rank**		
State	*State's per-capita award expenditures*	*Percent of students within commuting distance*	*Subgroup assignment†*
Idaho	40.5	28.5	4
Illinois	4	8	1
Indiana	10	49	2
Iowa	9	30	2
Kansas	18	21	1
Kentucky	26	11.5	3
Louisiana	39	16.5	3
Maine	25	49	2
Maryland	28	6	3
Massachusetts	15	11.5	1
Michigan	13.5	28.5	2
Minnesota	8	41	2
Mississippi	40.5	3	3
Missouri	22	25.5	2
Montana	38	37	4
Nebraska	37	45	4
Nevada	‡	49	4
New Hampshire	‡	19	3
New Jersey	6	32	2
New Mexico	‡	43	4
New York	1	34	2
North Carolina	11	2	1
North Dakota	27	39.5	4
Ohio	16	46.5	2
Oklahoma	36	37	4
Oregon	19	15	1
Pennsylvania	3	42	2
Rhode Island	13.5	25.5	1
South Carolina	‡	8	3
South Dakota	30	46.5	4
Tennessee	‡	25.5	3
Texas	23	32	2
Utah	29	44	4
Vermont	2	25.5	2
Virginia	31	14	3

	High-To-Low Rank*		
State	State's per-capita award expenditures	Percent of students within commuting distance	Subgroup assignment†
Washington	21	13	1
West Virginia	20	10	1
Wisconsin	5	18	1
Wyoming	‡	21	3

* States with high expenditures and high percents have been assigned low ranks; for subgroup assignment purposes, rankings of 25 or less are considered high and rankings of 26 or more are considered low.

† Subgroup code definitions:

1. HIHI subgroup: high per-capita award expenditures and high percentage within commuting distance
2. HILO subgroup: high per-capita award expenditures and low percentage within commuting distance
3. LOHI subgroup: low per-capita award expenditures and high percentage within commuting distance
4. LOLO subgroup: low per-capita award expenditures and low percentage within commuting distance

‡ State has no scholarship program. For the purposes of subgroup assignment, it has been treated as a member of the low per-capita award expenditure group.

SOURCES: The source for the state rankings by per-capita award expenditure is: Joseph D. Boyd, *National Association of State Scholarship Programs Seventh Annual Survey, 1975-76*, p. 8. Illinois State Scholarship Commission, Deerfield, Illinois, 1976. The source for percentages of population within commuting distance of a free-access college is Warren Willingham, *Free-Access Higher Education*. New York: College Entrance Examination Board, 1970, Table A, p. 195.

A second survey was directed in May 1977 to four other populations:

1. Directors of educational programs in state and county correctional institutions for youth
2. Directors of YMCA's and YWCA's
3. Directors of Upward Bound programs
4. Vocational and employment counselors

The lists used to identify appropriate respondents were:

1. *Directory of Juvenile and Adult Correctional Departments, Institutions, Agencies and Paroling Authorities,* 1977 edition, published by American Correctional Association.

2. A commercial mailing list of YMCA's and YWCA's.

3. *Directory of Special Programs Projects, 1976-77 Program Year,* prepared by Bureau of Postsecondary Education, U.S. Office of Education.

4. A mailing list of vocational counselors maintained by the American Personnel and Guidance Association.

Samples were drawn from these lists numbering 200, 150, 160, and 150, respectively. Usable returns totaled 48 (24%), 11 (7%), 41 (26%), and 10 (7%). A copy of this questionnaire is reproduced on pages 140–143.

In view of the low response rate, these data were not extensively analyzed. Two basic analyses were performed to permit at least a rough comparison with the guidance counselor results. These are reported in Tables 13 and 15 in Chapter 3.

College Entrance Examination Board
888 Seventh Avenue, New York, New York 10019
(212) 582-6210

Dear Colleague:

Recent studies commissioned by the College Entrance Examination Board suggest that the goals for broader access to postsecondary education that were widely supported during the 1960s still have not been attained. This is hard to measure, however, since the goal statements were rarely defined precisely. Also, much of the available national data concerning progress during the early 1970s already may be out of date. Between 1970 and 1975, state and federal expenditure for postsecondary student financial aid more than tripled. At the same time, sharp changes occurred in the employment markets.

These separate observations leave unclear whether or not there are many graduating high school seniors in the United States whose adult lives would be best served by further postsecondary training soon after high school graduation and do not follow this path mainly because they cannot afford it. It is thus unclear whether additional public expenditure for postsecondary student financial aid is very important or only marginally so when compared with other educational and social needs.

As one approach to this important question, we are seeking informed estimates by those who today are its closest observers.

We would be grateful indeed if you could find time to fill out the attached questionnaire by April 8 and return it in the envelope provided. A copy of the results will be mailed to you as soon as the tabulations have been completed. We would also welcome any written comment you may have about any aspect of this issue that the questionnaire did not treat adequately in your judgment.

Many thanks for your assistance.

Sincerely yours,

Darrell R. Morris

Darrell R. Morris
Executive Associate

March 1977

College Entrance Examination Board
Spring 1977 Questionnaire
Concerning Access to Postsecondary Education

1. What is the size of the June 1977 graduating senior class in your school district?

   Total number of seniors: ______

2. How many of these seniors do you now estimate will enroll in *full-time* postsecondary education within 6 months of graduation?

   4-year colleges ______
   2-year colleges ______
   Public technical schools or institutes ______
   Private business or trade schools ______
   Total immediate entrants: ______

3. How many of these seniors (question 1) do you now estimate will first enroll in *full-time* postsecondary education between 6 and 24 months after high school graduation?

   4-year colleges ______
   2-year colleges ______
   Public technical schools or institutes ______
   Private business or trade schools ______
   Total delayed entrants: ______

Even if you have little definite information about the activities typically pursued by your students more than six months after graduation, we would appreciate your best estimates in response to question 3.

4. What is your estimate of the number of June 1977 graduating seniors who will not enroll in *full-time* postsecondary education within 24 months after graduation? (Total students from question 1 less immediate entrants and delayed entrants from questions 2 and 3.)

   Total nonentrants: ______

5. (a) In your judgment, how many of those seniors who do *not* plan to continue their education (question 4) would make a better next step if they could reconsider and instead plan further full-time education?

   Number of students: ______

   (b) What types of postsecondary institutions might be best suited for these students? Please indicate estimated numbers of students for each type.

   4-year colleges ______
   2-year colleges ______
   Public technical schools or institutes ______
   Private business or trade schools ______

6. Is the estimate you provide in question 5a for 1977 reasonably representative of what you would have estimated in recent years? Please circle one of the following.

   1 1977 estimate is significantly larger than it would have been for other recent years.
   2 1977 estimate is about the same as for recent years.
   3 1977 estimate is smaller than it would have been for other recent years.

7. (a) Of the additional graduates that you judge would profit from further full-time education (question 5a), how many do you estimate will not continue their education primarily because they lack the financial means to do so?

Number of students: __________

(b) On the average, how much scholarship or grant aid do you estimate would be necessary per student per year in order to enable those students in 5a above to continue their education?

Average annual aid required per student (estimated): $__________

8. Some economists and other observers have suggested ours is an "over-educated" society, and particularly that too many people attempt to continue full-time schooling following high school. How many of those seniors planning postsecondary education (questions 2 and 3) do you estimate might be better served in the long run by directly entering a work career or other activity which does *not* involve further fulltime formal education?

Number of students: __________

9. This questionnaire has sought estimates primarily related to how adequate or inadequate public scholarship and loan funds appear to be in providing reasonable access to postsecondary education. The adequacy or inadequacy of other public expenditures designed to give young adults a better start could have been chosen instead for attention. In your judgment, which of the following areas appear most important for added public expenditure, in order to improve the lifetime prospect for young adults? (Circle one number for each area.)

	Judgment as to Relative Importance				
Programs in Which Greater Public Expenditure Might Benefit Young People	Top Priority	Highly Important	Average Priority	Questionable Need for Further Public Expenditure	No Further Public Expenditure Needed
(a) Program of additional full-time jobs for youth.	5	4	3	2	1
(b) Provide on-the-job training programs for youth in industry.	5	4	3	2	1
(c) Scholarships and loans for postsecondary education.	5	4	3	2	1
(d) Greater per-pupil expenditure within secondary and/or elementary education.	5	4	3	2	1
(e) Additional programs to attempt to reduce dropout from secondary school.	5	4	3	2	1
(f) Problem-oriented or topic-oriented special programs (which are not part of the normal academic curriculum) such as education for parenthood, drug abuse, etc.	5	4	3	2	1
(g) Other (please specify)	5	4	3	2	1

10. What do you estimate to be the average family pre-tax income for the families of your seniors? (National mean family income for parents of high school seniors in 1977 is estimated at $17,800)

Please circle one choice:

1 Less than $6,000 a year
2 $6,000 to $8,999
3 $9,000 to $11,999
4 $12,000 to $14,999
5 $15,000 to $19,999
6 $20,000 to $25,999
7 $26,000 and above

11. Assuming there were no immigration or out-migration of families in your district, out of 100 entering first graders, how many would you estimate now graduate from high school?

____

12. What is the approximate racial distribution of students in your school?

White or Caucasian ____________%

Black, Afro-American or Negro ____________%

American Indian or Native American ____________%

Mexican American or Chicano ____________%

Puerto Rican ____________%

Other Hispanic ____________%

Oriental or Asian American ____________%

Other ____________%

13. Which of the following most accurately describes the area served by your school?

Please circle one number.

1 Center of large city
2 Large city
3 Small city
4 Suburban
5 Small town
6 Rural

14. How would you classify your school?

Please circle one number.

1 Public
2 Private—independent
3 Catholic
4 Other religious affiliation
5 Other

15. We would appreciate any other comments you may have on the issues covered by this questionnaire.

____
(Name of School Official Filling Out Questionnaire)

____
(Title)

____
(Date)

Thank you for your help. Please return this questionnaire in the attached envelope to:

College Entrance Examination Board (E119)
Box 592
Princeton, New Jersey 08540

College Entrance Examination Board
888 Seventh Avenue, New York, New York 10019
(212) 582-6210

Dear Colleague:

Recent studies commissioned by the College Entrance Examination Board suggest that the goals for broader access to postsecondary education that were widely supported during the 1960s still have not been attained. This is hard to measure, however, since the goal statements were rarely defined precisely. Also, much of the available national data concerning progress during the early 1970s already may be out of date. Between 1970 and 1975, state and federal expenditure for postsecondary student financial aid more than tripled. At the same time, sharp changes occurred in the employment markets.

These separate observations leave unclear whether or not there are many graduating high school seniors in the United States whose adult lives would be best served by further postsecondary training soon after high school graduation and do not follow this path mainly because they cannot afford it. It is thus unclear whether additional public expenditure for postsecondary student financial aid is very important or only marginally so when compared with other educational and social needs.

As one approach to this important question, we are seeking informed estimates from people who are among its closest observers. One survey has been sent to a sample of high school guidance directors. In order to get another perspective, however, we are also surveying a number of individuals who see young people in other settings, including directors of apprentice programs, correction officials, directors of programs designed to improve opportunities for minority students, and others involved in counseling young people about education and careers. We have tried to make the questionnaire general enough to be applicable in all these areas.

We would be grateful indeed if you could find time to fill out the attached questionnaire by May 27 and return it in the envelope provided. A copy of the results will be mailed to you as soon as the tabulations have been completed. We would also welcome any written comment you may have about any aspect of this issue that the questionnaire did not treat adequately in your judgment.

Many thanks for your assistance.

Sincerely yours,

Darrell R. Morris

Darrell R. Morris
Executive Associate

May 1977

College Entrance Examination Board
Spring 1977 Questionnaire
Concerning Access to Postsecondary Education

1. Approximately how many young people (aged about 17-20) were served by your program(s) during the last 12 months?

   Total number: ____________

2. Of these students, how many do you estimate have graduated from high school or will soon graduate or obtain an equivalency diploma?

   Total high school graduates: ____________

3. How many of these high school graduates do you now estimate will enroll in *full-time* postsecondary education within 6 months of graduation?

   4-year colleges ____________

   2-year colleges ____________

   Public technical schools or institutes ____________

   Private business or trade schools ____________

   Total immediate entrants: ____________

4. How many of these high school graduates (question 2) do you now estimate will *first* enroll in *full-time* postsecondary education between 6 and 24 months after high school graduation?

   4-year colleges ____________

   2-year colleges ____________

   Public technical schools or institutes ____________

   Private business or trade schools ____________

   Total delayed entrants: ____________

5. What is your estimate of the number of these graduates who will not enroll in *full-time* postsecondary education within 24 months after graduation? (Total graduates from question 1 less immediate entrants and delayed entrants from questions 3 and 4.)

   Total nonentrants: ____________

6. (a) In your judgment, how many of those seniors who do *not* plan to continue their education (question 5) would make a better next step if they could reconsider and instead plan further full-time education?

   Number of students: ____________

   (b) What types of postsecondary institutions might be best suited for these students? Please indicate estimated numbers of students for each type.

   4-year colleges ____________

   2-year colleges ____________

   Public technical schools or institutes ____________

   Private business or trade schools ____________

7. Is the estimate you provide in question 6a for 1977 reasonably representative of what you would have estimated in recent years? Please circle one of the following.

   1 1977 estimate is significantly larger than it would have been for other recent years.

   2 1977 estimate is about the same as for recent years.

   3 1977 estimate is smaller than it would have been for other recent years.

8. (a) Of the additional graduates that you judge would profit from further full-time education (question 6a), how many do you estimate will not continue their education primarily because they lack the financial means to do so?

   Number of students: ____________

   (b) On the average, how much scholarship or grant aid do you estimate would be necessary per student per year in order to enable those students in 6a above to continue their education?

   Average annual aid required per student (estimated): $ ____________

9. Some economists and other observers have suggested ours is an "over-educated" society, and particularly that too many people attempt to continue full-time schooling following high school. How many of those graduates planning postsecondary education (questions 3 and 4) do you estimate might be better served in the long run by directly entering a work career or other activity which does *not* involve further fulltime formal education?

Number of students: ____________

10. What do you estimate to be the average family pre-tax income for the parents of the young people served by your program(s)?

Please circle one choice:

1 Less than $6,000 a year
2 $6,000 to $8,999
3 $9,000 to $11,999
4 $12,000 to $14,999
5 $15,000 to $19,999
6 $20,000 to $25,999
7 $26,000 and above

11. What is the approximate racial distribution of the young people served by your program(s)?

White or Caucasian ____________%
Black, Afro-American or Negro ____________%
American Indian or Native American ____________%
Mexican American or Chicano ____________%
Puerto Rican ____________%
Other Hispanic ____________%
Oriental or Asian American ____________%
Other ____________%

12. This questionnaire has sought estimates primarily related to how adequate or inadequate public scholarship and loan funds appear to be in providing reasonable access to postsecondary education. The adequacy or inadequacy of other public expenditures designed to give young adults a better start could have been chosen instead for attention. In your judgment, which of the following areas appear most important for added public expenditure, in order to improve the lifetime prospect for young adults? Since you may want to make different judgments about programs for high school graduates and for those who will not graduate, the choices are provided separately for each group.

A. For High School Graduates (Circle one number for each area.)

Programs in Which Greater Public Expenditure Might Benefit Young People	Judgment as to Relative Importance				
	Top Priority	Highly Important	Average Priority	Questionable Need for Further Public Expenditure	No Further Public Expenditure Needed
(a) Program of additional full-time jobs for youth	5	4	3	2	1
(b) Provide on-the-job training programs for youth in industry	5	4	3	2	1
(c) Scholarships and loans for postsecondary education	5	4	3	2	1
(d) Greater per-pupil expenditure within secondary and/or elementary education	5	4	3	2	1
(e) Additional programs to attempt to reduce dropout from secondary school	5	4	3	2	1
(f) Problem-oriented or topic-oriented special programs (which are not part of the normal academic curriculum) such as education for parenthood, drug abuse, etc.	5	4	3	2	1
(g) Other (please specify)	5	4	3	2	1

B. For Those Who Will Not Graduate from High School (Circle one number for each area.)

	Judgment as to Relative Importance				
Programs in Which Greater Public Expenditure Might Benefit Young People	Top Priority	Highly Important	Average Priority	Questionable Need for Further Public Expenditure	No Further Public Expenditure Needed
(a) Program of additional full-time jobs for youth	5	4	3	2	1
(b) Provide on-the-job training programs for youth in industry	5	4	3	2	1
(c) Scholarships and loans for postsecondary education	5	4	3	2	1
(d) Greater per-pupil expenditure within secondary and/or elementary education	5	4	3	2	1
(e) Additional programs to attempt to reduce dropout from secondary school	5	4	3	2	1
(f) Problem-oriented or topic-oriented special programs (which are not part of the normal academic curriculum) such as education for parenthood, drug abuse, etc.	5	4	3	2	1
(g) Other (please specify)	5	4	3	2	1

13. We would appreciate any other comments you may have on the issues covered by this questionnaire.

____
(Name of Official Filling Out Questionnaire)

____
(Title)

____
(Date)

Thank you for your help. Please return this questionnaire in the attached envelope to:

College Entrance Examination Board (E119)
Box 592
Princeton, New Jersey 08540